REPORT RESUMES

ED 011 979 24 AA 000 098

A STUDY OF NON-INTELLECTUAL FACTORS IN SUPERIOR (AVERAGE AND SLOW) HIGH SCHOOL STUDENTS. THE CREATIVE INTELLECTUAL STYLE IN GIFTED ADOLESCENTS. MOTIVATION TO LEARN--ATTITUDES, INTERESTS AND VALUES.

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REPORT NUMBER BR-5-0460 PUB DATE 64
CONTRACT OEC-SAE-9101
EDRS PRICE MF-$0.27 HC-$7.52 188P.

DESCRIPTORS- *GIFTED, INDIVIDUAL DIFFERENCES, SUPERIOR STUDENTS, ABLE STUDENTS, *STUDENT ATTITUDES, *STUDENT INTERESTS, *PERSONAL VALUES, HIGH SCHOOL STUDENTS, *ENVIRONMENT, PROFILE EVALUATION, GRADE 10, GRADE 11, GRADE 12, EAST LANSING

A FINAL REPORT WAS GIVEN OF A THREE-PART STUDY THAT WAS MADE TO DETERMINE DIFFERENCES IN THE ATTITUDES, INTERESTS, AND VALUES OF GIFTED HIGH SCHOOL STUDENTS IN RELATION TO THEIR TOTAL ENVIRONMENT. A RESEARCH DESIGN WAS DEVELOPED TO DELINEATE THE CHARACTERISTICS OF THESE GIFTED STUDENTS, ESPECIALLY THOSE CHARACTERISTICS WHICH DIFFERENTIATE THE THREE PROFILE TYPES OF CREATIVE INTELLECTUAL, STUDIOUS, AND SOCIAL LEADERS. SUPERIOR STUDENTS FROM THE 10TH, 11TH, AND 12TH GRADES WERE ASSIGNED TO ONE OF THE THREE PROFILE GROUPS ON THE BASIS OF SELF-CLASSIFICATION. COMPARATIVE ANALYSIS WAS PERFORMED THROUGHOUT THE STUDY BY DRAWING A CONTRAST BETWEEN TWO 11TH-GRADE GROUPS, ONE AVERAGE IN ABILITY AND THE OTHER SUPERIOR. FORMAL AND INFORMAL MEASURES WERE USED TO ACQUIRE THE RESULTS. IT WAS CONCLUDED THAT THE CREATIVE INTELLECTUALS SHOWED STRONG, SELF-DIRECTED INTEREST IN LEARNING AND A GREAT WILLINGNESS TO DEAL WITH BOTH THE SUBJECTIVE DATA OF THE SELF AND THE OBJECTIVE DATA OF THE LARGER WORLD. THE STUDIOUS, WHILE ALSO SHOWING A CONCERN FOR IDEAS AND A DESIRE TO LEARN, MAINLY CONFINED THEIR EFFORTS TO COMPLETING TEACHER-DIRECTED ASSIGNMENTS. THE SOCIAL LEADERS PREFERRED TO MAKE THEIR IMPACT FELT ON PEOPLE RATHER THAN IN THE REALM OF IDEAS. IT WAS FELT, THAT ON THE BASIS OF THESE FINDINGS, NEW GUIDELINES FOR EDUCATIONAL STRATEGIES SHOULD BE DEVELOPED TO TAKE INTO ACCOUNT DIFFERENCES AMONG THE GIFTED. A RELATED REPORT IS ED 003 182. (GD)

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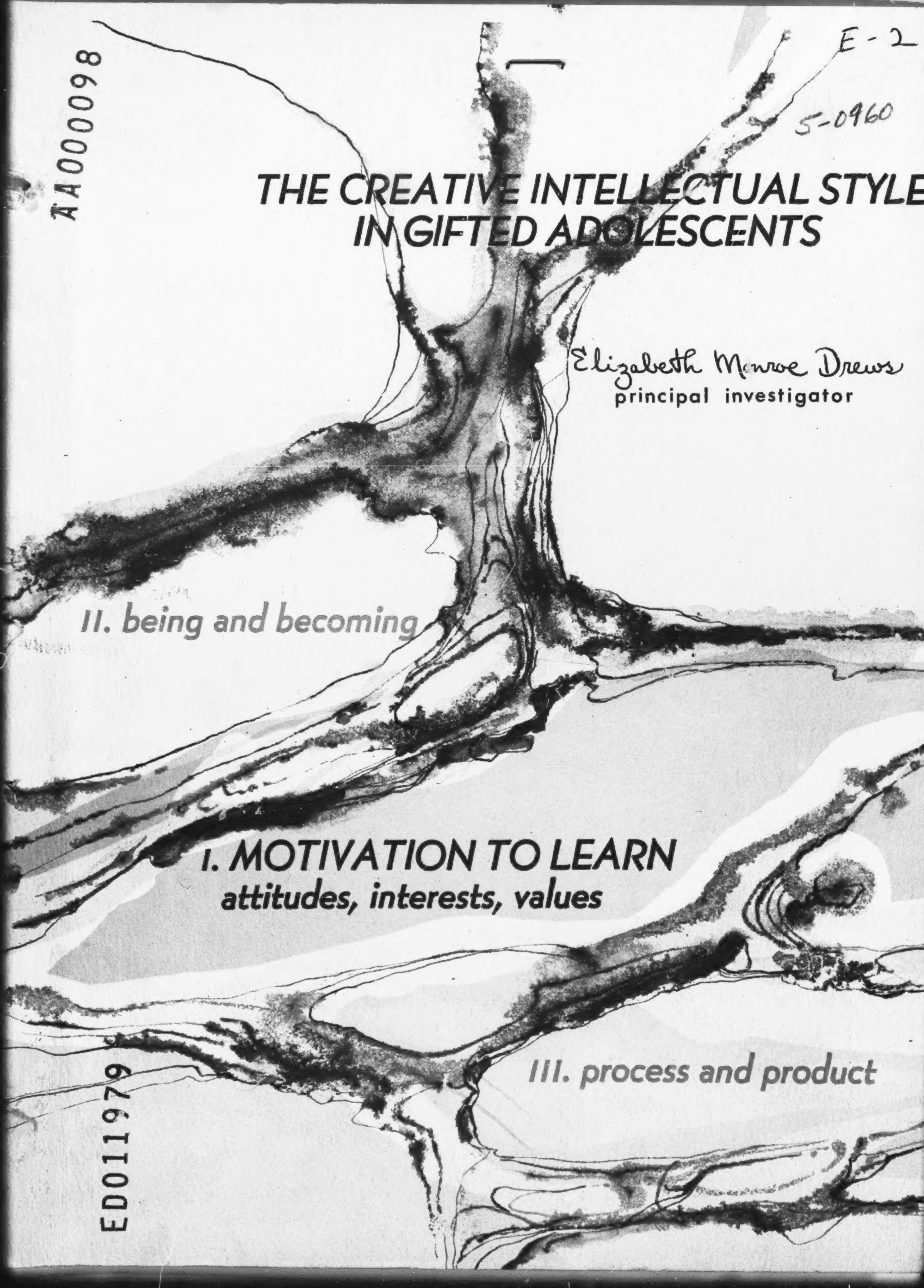

THE CREATIVE INTELLECTUAL STYLE IN GIFTED ADOLESCENTS

Elizabeth Monroe Drews
principal investigator

II. being and becoming

I. MOTIVATION TO LEARN
attitudes, interests, values

III. process and product

ED011979

THE CREATIVE INTELLECTUAL STYLE IN GIFTED ADOLESCENTS
Motivation to Learn: Attitudes, Interests and Values

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Final Report
of
Cooperative Research Program
Project No. E-2
Contract SAE 9101
5-0460-2-12-1

entitled

A Study of Non-Intellectual Factors in Superior (Average and Slow) High School Students

Michigan State University
East Lansing, Michigan

1964

The Research Reported Herein Was
Supported by a Grant from the
U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
Office of Education

PREFACE

PREFACE

> (Man) is a highly educated product of the twentieth century civilization, chained, in a state of uneasy and hostile symbiosis, to a disturbingly dynamic unconscious, a wild phantasy and an unpredictable id--and yet capable of falling in love, writing string quartets and having mystical experiences.
>
> Living amphibiously in all these incommensurable worlds at once, human beings (it is hardly surprising) find themselves painfully confused, uncertain where they stand or who they really are.[1]
>
> Aldous Huxley

In this preface to the first of three reports which explore the creative intellectual style in gifted adolescents, I want to reveal--as Huxley has done for all men--my lack of final answers, my tentativeness as I approach the problem. It is my view that what Huxley says about the species as a whole is particularly valid for adolescents. Admittedly the young are, in many ways, painfully confused, uncertain where they stand and who they really are. And, I must add, that some of us who study them share this confusion. Not only is youth a time of undisclosed mystery but it is my view, in addition, that the intellectually superior adolescent is the most complex of all youth. He has ranged further and has many more developed interests and talents than other young people. However, saying that adolescents are difficult to understand and that gifted adolescents are the most difficult of all to comprehend, does not excuse us from trying to understand them. We cannot be proper teachers and educators if we do not seek out the kind of personal and experiential knowledge which will give us at least minimal insights into the needs and growth patterns of superior youth.

I have taken myself seriously in these respects and made the self-assignment of a series of tasks, which hopefully would, when completed, lead to understandings of this sort. Most of this work, excepting always the statistics and tables, has been more of a delight than a chore. Trying to understand people is a hobby for many of us and has been one of my favorite ways to spend time since I was an adolescent. Beyond this, having a teen-age daughter in the house and high school made it clear to me at the time I began this study that there was no other recourse--if one lived with adolescents one might as well try to understand them.

As I sought this understanding, I took many routes. At the beginning stages, I dipped retrospectively into my experiences, trying to find what insights my teaching and clinical work had left with me. Certain broad ways of looking at the problem came from these sources. And, since I was also trained in the "scientific" ways of finding out, I felt that I could get some clarifications from these avenues, too. I could make use of knowledge based on psychological-educational theory that came out of objective ways of seeking answers--the kind that are reported as research findings. In fact, a major focus of my own studies might well be of this nature. Finally, and most importantly, I came to realize my training in clinical work supplied still other methods I could use for "seeking answers." Thus, I decided to do a study which involved testing some generalizations about able youth. I was asking how well do these young people know themselves. I planned to examine the validity of their self-images. To find out, I compared their self-descriptions with other more specific statements of their interests and values. Were gifted young people knowledgeable enough about themselves and firm enough in their sense of identity to be consistent in what they said? Did they have clear ideas about who they were and how and what they preferred to learn and think about?

In none of these approaches could I be truly objective and uninvolved--this is never possible for a psychologist who works with people. The very diminsions that I chose to test and study were a reflection of my own attitudes, interests and values. There was no way to be impersonal about my hopes, fears and loyalties. However, I have come to feel that this is not an anti-scientific attitude.

As Maslow[2] has indicated, a certain kind of objectivity can come from caring. Similarly, I can contend, by using Maslow's definition of science as a process of "simply looking at things for yourself",[3] that I was empirical.*

As I proceeded with my work I realized that what I was doing was exploring first stages of knowledge and that I still was not sure of how best to phrase questions or to communicate findings. What I knew was still inchoate and what I was discovering I often could not state clearly. I understood, however, that these uncertainties were necessary first steps in the clarification of my thinking about such a problem as motivation to learn among able young people.

It was clearly necessary, as I began this first study, to rely on hunches and intuition. An example relevant in this context occurred when I first developed the "types".** The conception came suddenly and the first descriptions were written within a space of an hour or two. My daughter, Karen, and I simply "spun" out four categories of able adolescents in an episode of what can only be called inspiration. Perhaps we would not have done this without a spur, but we had one. The instigation was a report on new ways to identify gifted adolescents that I had been asked to give to the National Association of School Administrators in Atlantic City. This decision to study superior youth in terms of types also helped supply an answer for another problem which plagued me. I was dissatisfied with over-simplified and over-general descriptions of gifted youth, the kind that spoke of these young people as if they were all alike. Marked and lasting differences were apparent and had to be included in the picture. As far as I can rely on my memory--these were the routes to and the motivations for the present study.*

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* At this point I would like to say how much I owe to Dr. Maslow for the insights, courage and encouragement he has given me. So much of what I do and say rests upon his thinking that I can in no way give him adequate credit or thank him enough.

** These four "types" are the central concern of this report.

My own life experiences and style were undoubtedly the major source for the approach I was taking. My interest in motivation to learn and in those who exhibit a flair for the enterprise (as well as in those who have learning difficulties)--came out of my early years as a teacher. From a one-room school in Oregon to a racially integrated but Oriental-dominated school in Peking, China, I always found that there were students who stood apart from the others by their intellectual curiosity and spirit of inquiry. This range of differences was particularly apparent among the students I worked with during the two years

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* In retrospect I have thought of many reasons why "types" were a logical way to handle a large number of ideas about adolescent characteristics. However, I think most of these reasons have come to me after the original insight.

I taught gifted groups. These were the ones who did not readily settle into the repetitive tasks of learning their tables and their spelling lists but who instead looked for what lay below the obvious and who doubted that the routine and the self-evident were talismen of truth.*

However, this report is not so much concerned with the educational setting as with the learner. I found myself asking--as educators and philosophers have been doing since the first tribal incantations were devised and the original fire was kindled--how does zest for discovery happen to occur and who is apt to exhibit it? For example, are there ways of identifying and describing the ones who have the fledgling interests and behaviors that are the precursors of creative productivity in the adult? I also came to ask a companion question--if we can identify these students, who are in many ways like creative adults, can we assess their present status and attitudes? How do they fare in terms of school achievement and how do they feel about our schools?

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*I also discovered (as have so many teachers) that there were many others who might be willing to think, to explore, to dream and to do, if the setting were right. Puppet shows and dramatics, art and science often provided the lure, and would lift certain of the uninvolved and even reluctant students into the realm of autonomous learning.

My work as a psychologist in both psycho-educational and psychological clinics made me acutely aware that many of the intellectually gifted do not achieve well, at least not in terms of school marks. More and more I came to recognize that non-intellectual factors play an important part in what we term school achievement, or designate as lack of achievement. Students of two particular orientations seemed to contribute heavily to the ranks of able learners who received low marks. Strangely enough these two groups differed greatly, one from the other, in intellectual interests. On the one hand, there was a cluster of able students with a markedly high motivation toward learning and readiness for psychological growth and, on the other hand, there was another group of bright students who valued learning only slightly more than the general population. Both tended to rebel against the convention of the schools--i.e., doing well what the teacher asked them to do. Many who belonged to this first variety of low achiever were extremely well informed, creative and intellectually inclined--but wanted to take a strong hand in charting their intellectual destinies. The second variety were generally uninterested in intellectual matters and, for thisreason, less well informed and open to learning. In colleges this latter group would undoubtedly adhere to the somewhat outmoded concept of "getting by" on a "gentlemen's 'C'."

An opportunity to work directly with programs for the gifted and the slow learner and to do research on their characteristics and patterns of learning, came in 1949 when I became Director of Psychological Services in the Lansing Public Schools. Here we faced the stark reality of children with severe learning problems--children who could not do their school work and whose approaches to learning had become fumbling and apathetic. Both social conscience and school pressures dictated that we work with this group before we centered our attention on able students.*

It was thus not until 1953 that programs for school failures were well enough established to allow us to study and describe the gifted and begin to develop programs for them. At this time I worked with three others--Margaret Blankenburg, an elementary principal; Granella Smith, an assistant principal in a junior high school; and Elizabeth Lawry, an assistant principal in a senior high school. We spent a year studying the literature on the gifted. Our discussions, enlivened by the practical and creative insights of these three Lansing principals, helped me greatly. The immediate result of our efforts was the establishment of a seminar-type class in West Junior High School, a similar class in Sexton Senior

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*We developed special programs and made special materials for the mentally retarded, the emotionally disturbed, the slow learners and those with reading problems.

High School, and a pilot program for gifted elementary children in several schools.* The second report in this series concerns itself with an educational program which was one of the outcomes of these early efforts.[4]

As a psychologist I felt that my particular contribution might be in the area of increasing our understanding of gifted young people. Although I had earlier insights into the nature of the creative process and the creative individual, these ideas had not been clarified or formalized. When the opportunity came to do research that would lead to better understandings and descriptions of the gifted, I tended to disregard my own ideas and followed the accepted model for selecting low and high achievers--school marks. John Teahan, a psychologist who worked with me, and I did a study in which we examined the qualities and background factors that distinguished high and low achievers.[5] This study has been well accepted and reprinted in several books but I was disappointed in how little it told us about gifted children. As might be expected, we found the mothers of high achievers (students with high grade point averages) to be more demanding. However, differences between the low and high achievers were hard to find and generally ambiguous. Since there have been many studies that emphasized differences between low and high achievers, I found this apparent lack of clear-cut and predictable differences intriguing. For example, there was the disquieting fact that many low achievers were reading more and were better informed than high achievers. I came to feel that high marks were not a sure sign of what a student knew or did. Such thoughts caused me to re-examine my earlier experiences in teaching. I reflected especially on my work with dramatics, creative writing and the arts and thought about those more creative young people many of whom were inveterate readers and questionners and who were also often low achievers in terms of school marks. My hope was to learn more about their characteristics and predispositions.

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* The latter met in special interest groups for two to three hours a week.

These reflections were augmented by new experiences, especially ideas derived from the experimental seminars for gifted students which had begun in 1954. In 1957 I was able to itensify these studies of gifted adolescents by direct observation and by taping classroom discussions as well as by interviews and informal contacts. We gathered data and impressions about the characteristics of these students during two school years, 1957-58 and 1958-59. These were the pilot and experimental years of a study,[6] supported by the Cooperative Research Branch of the United States Office of Education, concerned with special grouping and instructional approaches for superior, average and slow students.* These funds made more detailed records possible and gave me time to work with teachers and young people in different ways and thus to come to new insights about educating able adolescents and to reach further understandings about their characteristics. I had concluded that our program for the gifted was not adequate and that I was probably not asking the most meaningful questions about these young people. Thus I

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* Certain conclusions were drawn from the study about the effects of grouping. For example, within the usual context of school instruction in heterogenous groups, education in terms of curriculum and text seems to be more appropriate for the average student. Although differentiated instruction should be an essential concern if students are grouped, rarely do the schools differentiate enough--particularly for the gifted. In this grouping experiment, grade level textbooks had been discarded for slow learners since they could not read them, but had been retained in the educational program for superior students. Our efforts, as a result, were much more adequate for the slow and we had many evidences of social and emotional growth on their part. I concluded that far more radical revision of curriculum and methods was necessary for the gifted group if we truly wanted these students to become more involved and more responsible learners. Not only did I believe that there was a need for some rather fundamental curriculum changes but I was also convinced that there was a need for research instruments to test the effectiveness of our programs in terms of attitudes, values and thinking skills.

Dissatisfaction with programs that provide "enrichment" for the gifted and tests that are customarily used to measure learning status and achievement gain has been expressed by certain educators and psychologists. For example, James Gallagher, J.P. Guilford, and Paul Torrance have all expressed concern about the usual programs and tests and have introduced innovations.

Thus I have continued to do further research in the last seven years. These new experimental enterprises have allowed me to continue to refine and, when necessary, refocus my ideas as to characteristics of gifted adolescents.

Most psychologists and educators are aware that although tests should be of predictive value, the usual testing approaches tell us little about potential for psychological growth. Yet it is this capacity for self-actualization which must be studied (and, of course, fostered) if we are to take this generally accepted aim in education seriously. Most studies have looked at academic prowess-grades received or scores on achievement tests-or have chronicled success (including popularity with classmates). These approaches do not explore ways of fulfilling higher-order needs. Gifted students have been treated as a homogeneous cluster except for some comparisons by achievement level (high and low marks), by sex and by age. Growth predispositions--attitudes, interests and values--have been rarely explored. There is little information about intellectual motivation or how this "drive to learn" takes shape. Yet we know, that althouogh bright young people generally "learn to learn" and often learn avidly, there are many who are remarkably selective about what they learn. For example, some like school assignments, and some like to deal with ideas on their own, and some simply want to work with people.

The questions that are asked determine what we learn or what we don't learn about young people. I concluded that studies of school achievement (based on marks) gave us only limited insight into why school work is avoided or done poorly by certain able students. Averaging different kinds of low achievers together tended to obscure distinctions. I also found that studies using the classic division of boys versus girls gave little understanding of the problems involved in fostering a motivation to learn. Girls generally received better marks than boys but this has been the pattern since the right to a public education was given to girls. Neither a separation and comparison of students based on high and low marks nor on sex told much about which students were most eager for and open to learning nor did it tell how to win more students over to the learning enterprise. Age differences also seemed to add little to our understanding. I obviously had to change my research tactics and revise the questions.

Fortunately in the late 1950s I was able to profit from the emergence of a "new force" in psychology, new theoretical constructs, and new instruments. I read Maslow, Rogers, Fromm, May and many others. Ultimately I realized that these approaches and frames of reference suggested new patterns of education and better ways for understanding human growth. Evaluation instruments were developed that measured positive attitudes rather than just the negative or abnormal. It must be apparent to the reader that the new theory was consonant with the insights I was gaining from my teaching experiences, my research work with adolescents, and with the ideas expressed by some of the students and teachers with whom I had been working. From this totality, I developed new ways of looking at the problem. The central question remained, "How is it possible to describe and understand the gifted?"[7] Companion questions were also posed: "What are the effects of social class on achievement patterns and value systems?",[8] "How do routine assignments and the pressure to conform influence social and emotional growth?"[9] "How does one develop quality in education--the ability to think critically and creatively?",[10] and "How is intelligence related to creativity?"[11]

The early insights, later dissatisfaction with the conventional criteria of achievement--coupled with the understanding that emerged from an enlarged theoretical orientation--encouraged a shift of focus from the generalized descriptions and the ~~more usual~~ dichotomies, including the use of school marks as a measure of achievement,[12] to the study of able students in terms of types of achievement motivation. There now seemed to be ways to develop a better understanding of interest in learning and potential for psychological growth. Perhaps by a new focus I could begin to identify these qualities.

An Overview of the Present Study

On the basis of this exploratory work with the tenth grade population that had been in the grouping study, I made the inference that a student's choice of self-description (a self-selection of type) told us much about his interests, attitudes and values. The Cooperative Research Division of the United States Office of Education awarded me a developmental grant to continue this study during the school year of 1960-61. The study was made with all identified able high school students in the Lansing senior high schools. This sample included the original ninth grade population that had been in the grouping study and who were* eleventh graders at the time of this new research. Added to this sample of eleventh graders was a large number of superior students from the tenth and the twelfth grades. Average and slow students from the eleventh grades were also tested. For a variety of reasons the report is primarily concerned with the superior students but data on the average students are used to provide contrast both in Chapter II, devoted to the population description, and Chapter III which reports results.

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* The data on slow students is not reported due to the fact that our inspection of these results convinced us that their inadequate reading skills made them invalid.

Special thanks are extended to all personnel in the Lansing Public Schools, including the students, who made this study possible. At the time of the study, Dr. Dwight Rich was superintendent and Dr. Forrest Averill was deputy superintendent. Both were interested in this special venture and helped in many ways. Similarly the administrative staffs of the three Lansing senior high schools were always cooperative and helpful even when the arrangement of half-day testing sessions posed additional burdens. Particular thanks are due to the following:

Helen Benjamin, assistant principal, Eastern
Elfie Christenson, assistant principal, Everett
Elizabeth Lawry, assistant principal, Sexton

The burden of the statistical work was carried by Susan Montgomery and Mary Bridenbaugh Merillat. Both also contributed much to the ordering of the results and organization of the report. Shirley Brown was not only our excellent typist, but maintained high interest in the project throughout. My husband, Robin Drews, has helped immeasurably by offering moral support and editorial comment.

John de Jung, University of Oregon, provided excellent advice as to how to proceed with the statistical analysis.

Willard Warrington, Director of Evaluation Services, and David Krathwohl, Coordinator of the Bureau of Education Research, both at Michigan State University, were also helpful at all times. I particularly want to thank Richard L. Schiefelbusch, Director of the Bureau of Child Research at the University of Kansas, who read the entire manuscript with great care. His suggested changes have been incorporated in this final version.* Finally, William Carricker of Cooperative Research, USOE, discussed the project with me at all stages, showed much interest and suggested ways for reducing the report to a manageable size.

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*The project director, afrer this data was collected, was awarded a senior research fellowship from NIMH and spent a year working with Dr. Schiefelbusch. At this time she concentrated on ways to study the characteristics of gifted young people more effectively.

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3. Ibid., p. 135.

4. Elizabeth Monroe Drews, THE CREATIVE INTELLECTUAL STYLE IN GIFTED ADOLESCENTS; Being and Becoming: A Cosmic Approach to Counseling and Curriculum, Report II in a series of three: Final Report for the Media Branch, Title VII, National Defense Education Act, Contract No. 7-32-0410-140, U.S. Office of Education, "The Effectiveness of Special Training with Audiovisuals in Changing Aspirations in Intellectually Superior Students," Phase I. (East Lansing: Office of Research and Publications, College of Education, Michigan State University, 1965.)

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6. Elizabeth Monroe Drews, Student Abilities, Grouping Patterns and Classroom Interaction. Final Report of the Cooperative Research Program, 608, U. S. Office of Education. "The Effectiveness of Homogeneous and Heterogeneous Ability Grouping in Ninth Grade English Classes with Slow, Average and Superior Students," (East Lansing: College of Education, Michigan State University, 1963).

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I. PROLOGUE

The world that presents itself to our able youth may not be a brave or even a new one but, in many ways, it is strikingly different from the world of their parents. The globe can be encompassed in a few hours rather than the three years that Magellan devoted to the enterprise. Now exotic cultures come into our living rooms through a range of media and we meet an endless variety of people--from diverse nations, races and religions--as we attend our colleges, engage in world politics and business and travel. People who have not yet learned to accept that "all men are brothers" suddenly find that all men are neighbors. These new neighbors deviate from what we have known to the point of being dissonant and perhaps irreconcilable. Nevertheless, we find that, despite the dissimilarities, there is a basic consonance between the new and the old neighbors. All have similar needs, desires and a fundamental humanity.

The behavior sciences, especially through the cross-cultural studies, have identified and clarified many of these likenesses as well as the differences. In these, and many other ways we become continually more able to build bridges between what was the discrete and isolated to the more universal of experiences and feelings. More people are coming to understand, as Aldous Huxley did, that there are "a great many kinds of merit and an infinite variety of human beings."[1] And more are inquiring--how does one do justice to it all?

As physical and human boundaries evaporate and distances elide, the extraordinary scientific and technological advances and the expansion of knowledge of the Twentieth Century have enlarged man's world immensely. We know more facts and we have more theories, but developing an encompassing and unifying understanding of it all is extremely difficult. It may not be that the universe is truly more complex, but man, by applying his imagination and continually visualizing new things, creates and experiences it in this manner. In such a pattern of continuing innovation and change, individuals increasingly become more consciously participant in their own evolution. They are free--as never before--to act out individual variations of the human role, and such freedom brings with it inevitable responsibility. In light of this we must seek to discover in our youth the outstanding talent for imaginative and responsible participation in the world, and we must search for ways to identify and foster such talent for as large a number as possible.

The changes in knowledge and in direction in the world are producing a shift in leadership which may easily mean that the entrepreneurial spirit, so highly valued in the industrial society, will not be seen as desirable in what Bell* has called the Post-Industrial society. Emphasis may shift from making money to producing ideas and, as Bell sees it, the conceptual innovators may become the new elite. Fortune has said that knowledge is emerging as our biggest business. And Bell predicts:

> I would even make the bald claim that in the next 40 years the universities will replace the business firms as the major center for the society.[2]

It is Bell's view that the creation of new ideas will become a function of the intellectuals who work in and out of universities. A free setting which will allow disinterested inquiry and basic research is seen as essential for this new world in which the creative intelligence assumes a continually more important role. Much of the research (most of it supported by the government) will necessarily be "generation of knowledge," which is theoretical in nature, and thus will have strong appeal for the brightest and most free-thinking of students. This is not to say that factual knowledge and empiricism will be disregarded, for the demands for progress within our society necessitate the perpetuation of scientific and technical advances of all kinds. However, the ever-changing patterns as well as the variety of applications of this scientific and technical knowledge--along with its depersonalizing effects upon society as a whole--make it clear that what must be sought in the future is a reaffirmation of the value of human beings and a renewed and vigorous concern for their destiny. This will mean we must devise a new system of values, with all its moral and ethical implications, which will help bring into realization better patterns of living. The emphasis, then, must be on helping our youth to develop a theoretical orientation as well as a talent for remaining open and flexible and innovative. But these creative and intellectual abilities are not sufficient. The young person must, in addition, have a faculty for thinking critically about the particular and making good decisions, especially as these apply to the universal of the human situation. As Philipson has said, "The two are complementary. Only by accepting the particular for what it is, can one develop a sense of what is appropriate to general understanding."[3] The need is for more able youth to go beyond specialism and become philosopher generalists.

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*Daniel Bell, for a decade labor editor of Fortune, and now head of the sociology department at Columbia University.

A basic problem that is seen by many who comment on the present environment of change is that of giving a responsible direction to this change. Bridenbaugh, the historian, has commented that we cannot afford to have a great mutation--to forget our human heritage,[4] and Cousins (editor of the Saturday Review), in his essay, "Life Inside the Centrifuge," sees the speed of change as taking away the very core of meaning from life.[5] The fear is that training and activities will become more and more intellectualized and take into account less frequently emotional dimensions and human needs. Michael* has raised the question as to whether anyone will be able to speak to the systems analysts.[6] He predicts that training and research interests may make those who man the machines excessively narrow, and

> . . . given the nature of their education, most of them [the technicians] will have had at best little more than ritual exposure to those recorded experiences of mankind and to their interpreters which help them to make men wise, humble and sensitive.[7]

However, it is quite possible that there are many among our most gifted youth who have broad interests, a lively curiosity about the world and a deep concern for the direction of human development. Every culture and every era have produced philosopher generalists and, it may be assumed, that many individuals--despite dominant cultural trends--are predisposed to think in humanistic terms. Throughout history the most highly developed human being has been the individual with the enlightened conscience who has searched for new integrations.[8] The desire of concerned educators and social philosophers for such patterns of human development to not only continue but to flourish is well expressed by Michael:

> [the hope is that] . . . men and women of great depth and insight will somehow make their way out of the training camps and the garrisons of the technologists. But [he continues less hopefully] the proportion is going to remain very small, while the need for them will be very great indeed.

It is our thesis that we cannot wait for "genius to out" for such spontaneous generation is rare. Many have been and will continue to be "mute inglorious Miltons" if we do not set about to discover and help them. It is our obligation as educators to assume this responsibility. We must find those young people with outstanding creative and intellectual talents and particularly those who show predispositions for becoming gifted generalists, i.e., those with a talent for living in and directing the destiny of the expanding-contracting world,* and who manifest not only the necessary intellectual capacity but also the kind of moral concern and character necessary for such endeavors.

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*Donald Michael, social psychologist at Institute for Policy Studies, Washington, D.C.

The potential philosopher generalists must be helped when they are young to understand the larger setting, and they must learn to lead the comprehensive and responsible lives demanded by this new kind of world which is evolving.[10] However, working in cooperative ways will not need to mean a loss of individuality. On the contrary, the individuals who contribute the most will be the most creative and the most autonomous. Maslow has presented a concept of synergic, or unified, behavior in which he holds that conditions can be worked out in which the full and unique development of the individual can be a great advantage to his society.[11] There seems to be little doubt but that the autonomous and creatively contributive citizen of the future must think in terms of relatedness and process and must be comfortable with both complexity and comprehensivity.

Although there is no generally agreed upon way of defining the highly developed and the truly mature individual, there is, in current psychological theory, considerable consensus on this point. This self-actualizing individual* is seen as a person with an original mind, who is flexible in self-conception, comfortable in many roles, diversified in outlook and who, above all, can serve society well. There may be, then, a consonance between this new model of man (a creature who does not deny the validity of the particular or the whole, of the affective or the cognitive), and this new world which is at once both differentiated and coordinated. The creative process itself is a successful transaction between the individual and his environment. As Fuller says, "Total man may be going through a total wave of transformation into an entirely new relationship with the universe."[13]

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*Kinds of talent demanded will change rapidly and many specialists, unless we change educational patterns, will lack the breadth of training and the flexibility of outlook to deal with the over-arching aspects of emerging knowledge and the most comprehensive of the new patterns of living. A more general education embracing both the humanities and the sciences must be given to able youth and--although many will have a well developed specialty--they must also develop broader concerns based on human needs. A guiding philosophy may well come to supplant a professional allegiance for our most able youth.

However, neither of these images--that of the utopian world of unlimited scope and dynamic equilibrium and of the eupsychian (multi-faceted, autonomous, socially conscious) individual--is readily accepted by the majority of the world's population. Although contemporary technology is reaching the newer and the less-developed nations and certain people have moved from tribal rites onto modern assembly lines by simply changing their rhythmic movements, most nations and individuals are going through what Hoffer has called the Ordeal of Change.[14] There is undoubtedly much "lag" between the common man's patterns of thought and the parameters of knowledge in the world which he inhabits. It is our contention, however, that the individual who hopes to be "master of his times" must come to understand the significant trends of his era and must find meaning in the life of the present.** Beyond this he must develop new premises about the potentialities of the world and of himself as a human being. He must seek, if he is to make the best of his life, new understandings, new ways of responding and new ways of relating to people. Only by such intelligent, innovative and principled thought can the individual be maximally healthy in a psychological and physical sense. We are finding that certain of our gifted youth are of the frame of mind, and have the economic and psychological security, that may make such self-actualizing development possible. There is, at least in this group, readiness for change. In addition, recent psychological studies are supplying needed tools for the survey and understanding of the situation. Although the ideal of the fullest possible human development is an old one, only recently has psychological research supplied us with the instruments and methodology that make it possible to describe, somewhat objectively, the creative adult and the potentially creative adolescent.

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*The rare individuals whom Maslow feels are self-actualizing have been described as being creative in all of the generally acknowledged ways, as well as being, " . . . altruistic, dedicated, self transcending, [and] social."[12]

**This refers not only to a certain segment of our world but to the world at large, although the initial efforts should be made with those most ready--the intellectually able and the educated.

The need is for an emerging social order which supplies a responsive and evocative environment and allows an ever larger number of human beings to lead the "good life" and to become self-actualizing. This cannot happen unless certain key human beings think in flexible, broad-gauge and responsible ways, and become--in effect--philosopher generalists. They will blaze the trails along which successive generations of men will follow, each widening the paths until all merge in one united front. This is the ideal of giving positive direction and visibility to our aims.* Gardner,[15] Maslow,[16] Rogers,[17] Sorokin[18] and others have supplied insights into the qualities of this type-specimen, this ideal human being who makes a positive difference in the world. The description of the self-actualizing person which Maslow has developed has been particularly helpful in understanding the ideal toward which we should move.

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*The hope is, of course, to counteract depersonalization and valuelessness.

Another group of psychologists, MacKinnon and his staff at the Institute for Personality Assessment and Research (IPAR), have been making intensive studies of highly creative adults. In addition, Eiduson[19] and Roe[20] have documented the life histories of creative scientists. These studies are not primarily concerned with the adult chosen for a high level of actualization, but with individuals selected by their peers on the creative merits of their products. In most cases, when individuals are chosen for their productions alone, social conscience and altruistic concerns are only moderately developed. This is the case with many of the creative adults studied. However, in many ways, these original and productive adults are unusually mature psychologically. MacKinnon reports that his subjects generally have transcended the limitations of culturally perceived sex stereotypes and are masculine in their theoretical and achievement orientations and their focused objectivity, and feminine in their aesthetic, intuitive and holistic perceptions.

It may well be that creative young people show similar propensities. As MacKinnon suggests,

> . . . most creative students as well as students with creative potential have personality structures congruent with, though possibly less sharply delineated than, those of mature creatives.[21]

We propose that the additional dimension of a highly developed social conscience, as seen in the self-actualized adult (although perhaps lacking in certain artists and scientists) is desirable. In our studies--as well as in reports by others[22]--we have seen that our most able and sensitive young people are beginning to respond to this need.

The work done by the Center for the Study of Higher Education (CSHE)[23] also has given us excellent insights into ways of studying talented college students; Getzels and Jackson,[24] and Torrance[25] have contributed understandings about the motivation and thinking style of the creative and intellectually able adolescent. It is the work of the first group, CSHE, as well as that of the Institute for Personality Assessment and Research (IPAR) under the direction of MacKinnon, that has seemed particularly pertinent to our studies. Both groups have focused on attitudes, motivation and personality, and in many ways the questions that the CSHE is asking are similar to those used in the IPAR studies. Both have adapted and developed instruments and conducted research which has revealed much about creative people and the climates in which they thrive. The CSHE studies are of college students and have included investigations of intellectual giftedness and of creative potential, while IPAR has studied a more select and mature population--individuals selected by their peers as outstandingly creative. They have found that these individuals think, behave and have needs that are quite different from the average person. MacKinnon indicated that among the dominant characteristics of highly creative people studied are the following:

> . . . greater openness to and acceptance of feeling and emotion, a more sensitive intellect, and more far-ranging interests including many which in the United States would be thought to be feminine. In short, creative males give more expression to the feminine side of their nature than do those who are less creative.[26]

Warren and Heist (CSHE), in studying the personality attributes of gifted college students, found that this group is very different from average students on a number of the Omnibus Personality Inventory* scales.[27] For example, the gifted tested markedly higher on Thinking Introversion (TI) and Responsibility (R) than did an average group. The first scale, TI, indicates an interest in reflective thought, in working with ideas and concepts, and in intellectual independence, while the R scale reflects conscientiousness, thoroughness of planning, and concern with moral issues. On a number of other scales the gifted proved to be significantly more original, imaginative, inventive, resourceful, self-confident, tolerant of ambiguity, and proved to have greater potential for creativity than the average. In addition, these more able students tested higher than their average peers in aesthetic and theoretical orientation on both the Omnibus Personality Inventory and the Allport-Vernon-Lindzey Study of Values.

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*Drs. John Darley and Martin Weissman originally assembled this Omnibus Inventory (from a number of personality scales) explicitly for use in research with students of superior ability.

One of the major problems that education must face today is related to two kinds of information just reviewed--that relating to the able student (including his potential for a creative adulthood) and that concerned with the changing environment. It is apparent that the world that is emerging is one that demands complex, abstract and innovative intelligence--an intelligence sensitive to human needs. It is also clear that there are highly creative adults who have sensitivities not common among the generality of human beings. It is from these creative intellectuals that the world must receive guidance. They are in desperately short supply[28] and yet this is an unnecessary shortage. The studies of CSHE and of the National Merit Scholarship Corporation as well as our own earlier research indicate that there are large numbers of gifted and creative young people who have the necessary potential for such endeavors. These are the students who Michael and Bell say are much needed in this emerging world. Yet, unless we as educators foster their talent for self- and social-awareness, for flexible and original thought, it is quite possible that a number of these students may not live up to their potential to cope with the complexity of change.

Therefore, as knowledge and conceptual innovation assume ever more importance in our society, there must be much more concern for the discovery and nurturing of the individuals who have special talent of this nature. McClelland has made, in the past decade, extensive studies with the concentrated objective of discovering and stimulating the entrepreneur who was and is a leader in the industrial society.[29] Similar effort must be exerted to understand and foster the creative intellectual talent which will supply leadership in the Post Industrial society. The complexity of the world must be dealt with by the individual of depth and diversity. And the human needs of the world must be met by the individual dedicated to social causes. Such individuals at their highest level of development will approach self-actualization and thus think in both distinctive and integrative ways, somehow combining intellectual autonomy with social responsibility. More and more, those who are leaders must bring reason to bear on living. As Lindner said, "If a generation of men possessed this capacity alone, they could make an amazing world."[30]

In the discussions of philosophers (Alan Watts),[31] of scientists (Morrison)[32] and in the formulations of the personality theorists and counseling psychologists cited above, it is held that the greatest social contributions and the fullest personal development will be made by individuals who can go beyond Western objectivity and male stereotypes. Many social scientists and humanists recognize that the masculine qualities (which Americans extol) of tough-mindedness and an unwillingness to express feelings of what MacKinnon calls aesthetic interests (a sensitive awareness of self and others--the feminine dimension) mitigate against self-actualization. The creative person accepts, more readily, the contributions of Eastern thought--

the art of contemplation and adequate experiencing.* He is less apt than most Americans to find human decency (in terms of humanitarian-altruistic acts) a weakness and to see feminine intuitiveness as unsuitable for the American male.

The problem upon which the research to be reported focuses is determining the creative intellectual potential among a population of able adolescents. In addition to the identification of this group our concern is for an understanding of their characteristic attributes--their attitudes, interests and values. From this information our hope is to derive patterns for a more appropriate education for the gifted. There is a need to determine what the differences in attitudes toward learning, behaving and contributing are among superior adolescents--to understand what is going on "inside the person." There is a companion need to determine how educational programs can be developed in order to challenge students within the range of their abilities. Education must become more appropriate, facilitating and rewarding for those who will play innovative and leadership roles in the years ahead. The great need is not for the individual with a technical background, with a competitive spirit, or with simply tough-mindedness, but for the individual who is able intellectually, open to aesthetic perceptions and who has a genuinely felt response to (and responsibility for) people.

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*There are speculations as to how the young with such potentialities can be allowed to grow and develop into "full humanity." Huxley presented a utopian educational system in Island which would permit and encourage children to "experience their transcendental unity with all other sentient beings" and at the same time, through their studies of psychology and physiology, learn about their uniqueness.[33] Fuller feels that we may have to "shield" the new generation from "the mature wisdom and over-brimming knowledge, . . . the lovingly administered nonsense of grown-ups" by establishing an environment that "is so protected . . . that [the new generation] can develop naturally just in time to save man from self-annihilation."[34] He feels children must lead and educate the adults. However, in our need for survival, and beyond this in our need to understand how education can make not only life but a good life possible, we realize that we must make use of adults who can exert a constructive influence on the course of change. Certain adults have the comprehension of issues, the ability to define goals and the commitment to them that is invaluable in such undertakings. They must supply both the leadership and role models for youth.

I. PROLOGUE

1. Aldous Huxley, On Art and Artists, Morris Philipson (ed.) (Cleveland and New York: The World Publishing Company, 1962), p. 12.

2. Daniel Bell, "The New Education," The Environment of Change, pp. 92-99 (A Conference at Sterling Forest, Tuxedo, New York, June 14-17, 1964), p. 92.

3. Huxley, On Art and Artists, op. cit., p. 12.

4. Carl Bridenbaugh, "The Great Mutation," The American Historical Review, Vol. LXVIII, January, 1963, pp. 315-331.

5. Norman Cousins, "Life Inside the Centrifuge," Saturday Review, Vol. 47, August 29, 1964, pp. 60-61.

6. Donald Michael, Cybernation: The Silent Conquest (Santa Barbara, California: Center for the Study of Democratic Institutions, 1962).

7. Donald Michael, "The Impact of Science and Technology," The Environment of Change, pp. 24-34 (A Conference at Sterling Forest, Tuxedo, New York, June 14-17, 1964), p. 29.

8. Pitirim A. Sorokin, "The Powers of Creative Unselfish Love," Abraham Maslow (ed.), New Knowledge in Human Values (New York: Harper and Brothers, 1959), pp. 3-12.

9. Donald Michael, loc. cit., is understandably pessimistic; however, our surveys of able teenagers show a marked increase in what we consider generalist concerns.

10. "A Challenge to More Conscious Participation in our Evolving Universe--Text of an Educational Center Brainstorming Session," AAUW Journal, Vol. 58, May, 1965 (An interview with Buckminster Fuller), pp. 172-79.

11. Abraham Maslow, paper delivered at the Annual Meeting of the American Personnel and Guidance Association, April 12, 1965, Minneapolis, Minnesota.

12. Abraham Maslow, Towards a Psychology of Being (Princeton, New Jersey: An Insight Book, D. Van Nostrand Co., Inc., 1962), p. iii.

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21. Donald W. MacKinnon, "Characteristics of the Creative Person: Implications for the Teaching-Learning Process" (Paper presented at the 16th National Conference on Higher Education, March 6, 1961).

22. Arthur I. Waskow, "Young America's Newest Vocation," Saturday Review, June 5, 1965, pp. 12-14, 52-53; and Mervin Freedman, "The Post-Industrial Generation: Roots of Student Discontent," The Nation, June 14, 1965, pp. 639-43, both comment on the pro-social concern of today's better students.

23. T. R. McConnell and Paul Heist, "The Diverse College Student Population," Nevitt Sanford (ed.), The American College (New York: John Wiley and Sons, 1962). Other publications are available at the Center for the Study of Higher Education, University of California, Berkeley, California.

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25. E. Paul Torrance, Guiding Creative Talent (Englewood Cliffs, New Jersey: Prentice Hall, Inc., 1962).

26. Donald W. MacKinnon, "The Nature of Creativity," Creativity and College Teaching (Proceedings of a conference held at Carnahan House, University of Kentucky, June 14-18. Bulletin of the Bureau of School Service, College of Education, University of Kentucky, Lexington, Vol. XXXV, June, 1963), p. 15.

27. Jonathan R. Warren and Paul A. Heist, "Personality Attributes of Gifted College Students" (Berkeley: Center for the Study of Higher Education, University of California, mimeographed paper).

28. Donald Michael, _Cybernation_, _op. cit_.

29. David C. McClelland, "Toward a Theory of Motive Acquisition," _American Psychologist_, Vol. 20, May, 1965, pp. 321-333.

30. Robert Lindner, _Must You Conform?_ (New York: Grove Press, Inc., 1956), p. 196.

31. Alan Watts, _Psychotherapy East and West_ (New York: Pantheon, 1961).

32. _AAUW Journal_, _op. cit_.

33. Aldous Huxley, _Island_ (New York: Harper and Brothers, 1962), p. 237.

34. _AAUW Journal_, _op. cit_., p. 174.

II. INTRODUCTION

Studies of the identification of the gifted have frequently suffered from oversimplified criteria--a failure to recognize the complexity of the problem.[1] Similarly, educational programs devised for able students frequently lack subtlety, complexity and sufficient challenge.* Such descriptions of the talented and much of the education which they are given do not seem to be valid for today's world. The research described in this report is an effort to add further dimensions to the understanding of these able young people, particularly their motivation to learn and their potential for psychological growth. We wanted to learn more about those who were most highly developed in ego and character terms--who were beginning to display certain important qualities beyond high intelligence and noteworthy academic achievement. This is to say that our desire was to understand those students most open to learning about the world and about themselves.

The thesis underlying this investigation is that in the development of talent in the school, there must be a concern by psychologists and educators for three distinct but interdependent processes:

1. The identification, in a very general way, of students with intellectual potential.
2. The reaching of additional understandings of the individual, particularly understandings related to creative potential, motivation to learn and social conscience.
3. The development of educational programs

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*Students complain that they are too often taught what "someone else doesn't know," that enrichment is simply "more of the same," and that opportunities to inquire critically and to make creative innovations are rare.

appropriate for such young people.

No one of these can be effectively accomplished without taking into account the other two.

In this project the identification of the talented population involved the use of multi-dimensional criteria including IQ ratings,[2] achievement test scores, grades and teacher ratings. This information established that the entire sample of students to be studied was able to deal competently with activities of a school-type or academic nature. They were all well endowed with intelligence, and it could be assumed that many had creative potential and that some had humanistic and altruistic inclinations. However, we knew from studies of achievement patterns,[3] oral contributions in class,[4] and out-of-school activities[5] that not all students were equally engaged in or captivated by the pursuit of knowledge. Learning as a delight in itself, and not merely as a means to an end, was not a central focus for all bright students. Our investigation was concerned with a more careful study and an effort to understand this second dimension--the motivation to learn and psychological openness. The task was to discover which students showed the strongest intellectual interests and were most disposed toward speculation and creative thought, particularly about the human condition.

The third consideration, educational programs,* was dealt with only indirectly in this investigation. In studying able students, and especially those who showed the strongest motivation to learn, we were able to draw conclusions from their reports about the kinds of programs, teachers and schools that might be most appropriate. These will be summarized in the final chapter, and implications for changing educational programs to better meet the needs of talented adolescents will be given.

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*Although educational programs are not the central concern in this study, the investigator holds that curriculum must be differentiated in order that teaching be maximally effective. Programs should be presented according to the ability level of the population and be designed to foster freedom of thought and receptivity to learning. The educational environment must become, if it is to approach adequacy, more responsive and more evocative than it has ever been.

In considering the second and principal dimension of this investigation, that is, identifying and studying those able adolescents who showed the most concern for ideas and the greatest desire to learn, we asked questions of our students and of our data over a four-year period, 1957 to 1961. Our findings are, to a great extent, based on self reports, which means that we must limit our range of inferences. However, we have assumed that what emotionally healthy, intellectually-superior adolescents who have good self-concepts say they do is quite probably what they really do.[6]

In the research[7] immediately preceding the present study our interviews and observations allowed us to know many such young people well. We concluded, from these formal and informal contacts with students both inside and outside of classrooms, that their self-reports coincided closely with our observations. However, self-reports of attitudes, interests and values--particularly as these related to creative and intellectual abilities, behaviors and predispositions--were frequently at variance with teacher and peer ratings.

In 1959 we developed, for purposes of exposition, three type-profile descriptions: creative intellectual, studious and social leader.[8] All students were then asked to choose the type which they felt they were most like.[9] The motivational emphasis of each type might be summarized as follows:

Type Profile	Kind of Achievement or Motivational Emphasis
Creative Intellectual	Drive to deal with intellectual and philosophical matters, to be both contemplative and independent. Oriented toward scholarly, theoretical, aesthetic, complex, humanistic and original approaches.

Studious	Drive to perform, in outstanding manner, in the areas defined by parents and teachers as "school learning." Strong desire to get high marks and to measure up to the expectations of those in authority.
Social Leader	Drive to acquire power and money, a need for social acceptance by peers and a desire to be popular and to dominate and to engage in entrepreneurial activity. Strong interest in creature comforts.

There is considerable knowledge about and acceptance of the fact that in our schools the two most usual expectancies are for adolescents to get good marks and to be well accepted by others. Henry speaks of these as the common "cultural criteria of self-measurement"[10] for our young people, and notes that the knowledge of and identification with the artistic and scholarly traditions of our culture seem to be more uncommon.[11]

Certainly there is a lack of research on learning and motivation in adolescents, and there are relatively few studies of young people who choose the creative intellectual style as their desired life pattern. However, we feel this orientation is a very important one--much needed in our "environment of change," and not only compatible with the inclinations of many bright young people but quite necessary if they are to develop their potential for excellence. Thus, in the discussion of the three types--creative intellectual, studious and social leader--the primary focus will be on this first type.* Throughout it should be remembered that the creative intellectual style (probing and absorbing, pondering and innovating) is one in which the individual takes responsibility for his own learning. The creative intellectual is, in terms of personality and intellectual growth, more mature than the social leader and the studious adolescent. The differences between the creative intellectual and the social leader in attitudes, interests, values and inferred behavior are greater in most respects than differences noted between creative intellectual and studious young people. Representatives of these last mentioned types are, at least, both interested in learning--but they approach it differently. The basic dissimilarity lies in the fact that they tend to apply themselves to self-assigned and school-assigned learning tasks, respectively. In contrast, the social leader tends to disregard the knowledge that is available both in books and in schools. When compared to the creative intellectual, the social leader is seen as having little intellectual curiosity, as giving time to study reluctantly, and as rejecting entire realms of knowing and experiencing as "egg-head" or "arty." His cathexis is on other pursuits--being popular, being involved physically (he likes to be in group sports and to ride around) and acquiring both things and peer group status. As we have noted, the studious (with his willingness to do good work in school--

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*Throughout this study the self-actualizing and fully-functioning adult--described by Rogers and Maslow--is seen as an ideal; we have accepted as our aim that direction set by Aldous Huxley in his island utopia, i.e., "education toward humanity."[12] Similar descriptions of the mature, productive and creative adult are available in the writings of Allport, Barron, Bühler, Fromm, Gardner, Heist, Lindner, McConnell, MacKinnon, May and Murphy. The emphasis is on that most advanced and quantitatively rare level of development termed self-actualization. The adult prototype is an

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individual who is autonomous and self-accepting and who, at the same time, is deeply concerned about his society. His quality of thinking is characterized by independence, flexibility and originality; and he has much respect for individual integrity, his own and that of others. These descriptions are not complete or final since research in this area is only at the beginning stages. Further, the limits of human potentiality are only slightly explored and, of course, the far reaches will remain unknown. The ideal of the fullest possible development must be always open and continuously clarified and reformulated. The possibilities of the age itself dictate the possibilities and the image of the type-specimen.

although he often lacks full commitment to learning as a private and self-sustained enterprise) more nearly approaches the maturity of the creative intellectual. Both student reports and our prior observations confirm these differentiations.

Our research was done, then, to obtain consensual validation of the idea that the study of these contrasting types can provide insights, not available by a more general approach, into the orientations and values of able students. In addition, we wished to determine whether or not other self-report data, as these appear in questionnaires and attitudes scales, would be congruent with a student's more global or unitary self-description (based on his type-profile choice mentioned above).

Despite the fact that we can develop types which describe them in general ways, we are aware of the fact that the gifted are the most complex and idiosyncratic, i.e., most unlike one another, of all human beings.[13] It seemed to us that many of the generalizations about this group have tended to mask these divergent patterns of development. Type-profile self-selected descriptions were a device for a provisional, non-definitive sorting that would allow us to look at varying student values more searchingly. Typing at this initial stage in our study of the gifted adolescent also seemed to have some advantages over the case study which undoubtedly supplies the more accurate picture for a given individual and is, as Allport says, the only method "spacious enough to embrace all assembled facts."[14] Furthermore, we felt that types which had intrinsic validity would give us a tool to use with other and similar populations. We should be able to set limits and develop patterns in such a way that generalizations could be made with some validity.

We realized, however, that we had to interpret these generalizations with caution. Whitehead's dictum: "Seek simplicity and then distrust it," serves as a warning. A picture drawn from grouped data will result in an incomplete profile for any given individual. As Berrill has observed, no two people are, ever have been, or ever will be alike, and, as noted above, the most complex and thus most highly differentiated are the gifted.[15]

A further question that might be raised about the modal types we have developed could be a concern about the dimensions and related problems to which this study is addressed. We recognize that not everyone (perhaps not even every educator) values a strong and highly personal motivation to learn, and that not all educators will accept self-actualization--development of intellectual and creative potential in a context of concern for all--as a more important educational aim than doing well in school work or being socially accepted. We also realize that not all will prize or laud such qualities as aesthetic sensitivity, free play of the imagination and openness to new ideas. However, since curiosity and an interest in reading (anything) are aspects of the creative intellectual style, we assume that most of our readers will be inclined toward accepting creative intellectual values as important. We also assume that our readers will accept that it is desirable for young people to develop in a way that will expand the range of things--ideas, images, concepts--that they can appreciate and the range of responses that they can make. Thus, it is our premise that those who read this have somewhat different attitudes and interests than the average American whom Hofstadter has described as "anti-intellectual."[16]

Studies of both the adolescent society and of the larger society[17] point to the fact that the majority of people seem to be preoccupied with money and power and the hedonistic escapes (or traps) that these may provide. In contrast, there seems to be a general lack of interest in ideas and aesthetics.[18] Making things and amounting to something financially and socially are the apparent long-term aims of our able social leaders, of most average adolescents and of the general population, and are, by and large, valued more than discovery, contemplation and human concern. But the case we want to present is that the majority of able students, at least during early adolescence, have humanistic-democratic ideals and are learning oriented and thus the social leader is in a minority among superior youth.[19] And we also believe that the creative intellectual dimension, due to the cultural change indicated in Chapter I, is becoming an increasingly important one in American society.

Attitude Correlates of the Creative Intellectual Style

One way of discovering an individual's creative and intellectual predispositions is by assessing his attitudes, interests and values. The present study focuses on this approach. Several dimensions were selected for investigation, including: style of life (reported present and projected future) and attitudes toward school and career; critical thinking; dogmatism and rigidity; theoretical interests; aesthetic orientation; concern with ideas; disposition toward originality; and preference for complexity.* Except for the interest survey (SIS) which plumbed for style of life and attitudes toward school and career, and which had been developed with both average and gifted populations, all of the scales or measures had been used previously with highly intelligent adult populations and had been generally accepted as related to aspects of intellectual orientation and psychological openness.[20]

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*These characteristics relate to scales and instruments which are referred to in Chapter III.

The Pilot Study

The development of the proposal "A Study of Non-Intellectual Factors in Superior, (Average and Slow)* High School Students," upon which this research is based, came after three years of study of a sample[21] of superior Lansing public school secondary students, which will be referred to subsequently as the "longitudinal superior population." This group was originally selected in the fall of 1957 and observed, interviewed and tested during the school years of 1957-1958 and 1958-1959.[22] During the school year of 1959-1960, when the group was in the tenth grade, we did a pilot "type-profile" study to investigate the creative intellectual style and also to better understand the diversity among these able adolescents. It was from these early observations and interviews and from the preliminary findings of the pilot study that we arrived at the formulation of the present research. The following section is a review of selected findings from the pilot type-profile study of our "longitudinal superior population" (upper 10 to 15 per cent) as tenth graders.

Pilot Investigation of "Longitudinal Superior Population"

For this pilot investigation (1959-1960), 42 boys and 78 girls were given a questionnaire (Student Interest Survey II) to help us understand the background, interests and activities of each student, to give insights into his present style of life and the different things he wanted or hoped to do in his future life. Upon completion of this questionnaire the student was asked to choose which of the three type-profile paragraphs most nearly described him. Somewhat less than 20 per cent of this population checked creative intellectual, not quite 60 per cent checked studious, and approximately 21 per cent checked social leader. Samplings from the questionnaire data will be reported to indicate trends. These results will be combined with other information we had obtained about the students, their ability and achievement levels, and their acceptance by teachers, peers and counselors to give the reader an insight as to how far our understandings had progressed by 1960.

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*As can be seen from the proposal title, the plan was to include results on average and slow groups as well as on a gifted population. The slow students were unable to handle reading at high school level despite the fact that they were eleventh graders and, as a consequence, results obtained were invalid. The results on the average are reported in Chapters III and IV to provide contrast for the gifted group, the focus of this study.

When the creative intellectuals and social leaders were asked to assess the importance of intellectual and school accomplishment, the differences between creative intellectuals and social leaders were particularly dramatic. All students were asked to indicate by which of four given alternatives they would choose to be remembered:

Student with highest grades
Star athlete
Most popular
Brilliant (but not a grind)

Seventy per cent of the creative intellectuals* chose to be remembered as brilliant and 17 per cent chose to be remembered as having had the highest grades. Only 13 per cent selected as their choice of ultimate recognition being most popular or star athletes, qualities generally considered to be of prime importance to teenagers.[17] However, the social leaders proved to be much less interested in receiving scholarly or intellectual accolades. Theirs was a more typical adolescent pattern as indicated by the fact that 60 per cent chose to be remembered as most popular and 30 per cent chose recognition as star athletes.

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*On the basis of these questions the studious also showed strong interest in learning.

Intellectual competence was adequate for students of all types (it must be remembered that the sample was chosen on the basis of ability), but the creative intellectuals were the most able of the three types, with an average Stanford-Binet IQ of 136.5 and with reading and language skills at approximately the 14th grade level. However, the social leaders had more than adequate ability, with an average IQ of 131 and mean language and reading scores at about the 12th grade level. Critical thinking skills* were excellent for both groups. The creative intellectuals averaged 34.6 and the social leaders averaged 31.2, as compared with the mean of 29 for Michigan State University freshmen in 1959.

It would seem relatively clear that the creative intellectuals had the necessary attributes for doing well in a learning situation. However, we found their school performance to be below expectancy. Many were considered low achievers in relation to their tested ability. In fact, the creative intellectuals received somewhat lower grades (3.16 GPA) than the social leaders (3.31 GPA).

Yet this low rating in the realm of academic accomplishment did not seem to discourage the creative intellectuals. Both boys and girls in this group chose relatively higher level occupations and indicated that they wanted more graduate training than did the social leaders. Further, they liked academic enterprises much better than did the social leaders, and gave as their "primary interest in school"--school subjects and learning. The creative intellectuals specifically liked English, social studies and languages. In contrast, the social leaders showed little strong academic preference and made their dislike of mathematics, science and languages quite clear. However, the social leaders did have strong interests--in friends, recreation and extracurricular activities at school.

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*The American Council on Education Critical Thinking Test, Form G, is reported in raw scores.

After examining the data from our pilot study we concluded that the creative intellectuals were generally quiet, introverted and bookish. Our record of their participation in class discussions in the ninth grade indicated that they talked less than other superior students.* They report their reading to be generally of a serious nature--religion, history, philosophy, poetry, biographies, classics and plays. But they do not lack a sense of humor or of fantasy--they enjoy whimsical flights, satirical sketches, shaggy dog stories and science fiction. This is in direct contrast to the more circumscribed and less controversial reading of the social leaders which included for the boys "How to do it" books, mechanics magazines and technical manuals, comic books and T.V. guides, and anything on sports. Social leader girls typically read teenage books and movie magazines.

Not only do the creative intellectuals read different material from the social leaders but they also report doing much more reading. When asked why they read the two groups also differed. The creative intellectuals say they read as a habit and do not consider it as a means to an end. On the other hand, social leaders are prone to see reading as instrumental in getting better grades and developing better personalities, i.e., becoming well rounded.

In reviewing these pilot data, we have concluded that there is considerable strain between the creative intellectuals and their school environment. As was noted, this group received relatively low grades* in relation to their ability and achievement level and when compared with other able students. Further, when we contrasted the ratings that teachers made of creative intellectuals with those they made of the studious and the social leaders, we found that the former were rated lower in creative and intellectual qualities, higher in dogmatism** and lower in social acceptance. Only the last seems to be true. We have already noted the relatively high tested intelligence of the creative intellectuals and their great interest in creative expression and autonomy. Creative intellectuals are also rated lower by their intellectual peers on creative and intellectual qualities and are less socially accepted than the studious or social leaders.***

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*However, it was found that creative intellectuals (especially the girls) expressed great interest in seminars and wanted opportunities to discuss philosophical issues. As a result, a course was developed which allowed this kind of discussion and with this new course we found many of the quiet students suddenly becoming fluent.

As we summarize these findings on the pilot study, we must make it clear that only a few of the results we obtained have been reported. We have, for the sake of contrast and clarity, omitted references to the studious whose intellectual and personality development often falls midway between that of the social leader and the creative intellectual on a hierarchical scale. In comparing creative intellectuals and social leaders, we have selected only certain interests and attitudes to emphasize and hope in this way to give an impressionistic overview of the types.

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*Over one-half of the creative intellectuals say they study 15 or more hours a week and only rarely does a social leader report studying this much.

**Examination of their Rokeach dogmatism scores shows the social leaders as significantly more dogmatic (157.6) than the creative intellectuals (141.2).

***Creative intellectuals are much less accepted socially by their peers (12.0 choices for social leaders as compared to 4.0 choices for creative intellectuals). In other words, social leaders receive three times as many choices on classroom social sociometrics.

These preliminary findings indicated such a marked contrast among the types and suggested such basic differences in motivation and preferred life styles among able youth that we felt it would be most profitable to repeat the study with a larger sample. This was made possible, as was indicated earlier, by a small grant from the United States Office of Education which allowed us to examine the attitudes, interests and values of approximately 1000 high school students. About 500 of these were selected as intellectually superior with intelligence quotients of 120 and above but data were completed on only 400. In this latter group we were particularly interested in studying the characteristics of those students with marked creative potential. Chapters III, IV and V will report and summarize this study.

Chapter III presents the setting, the design, the selection of the sample, the description of the sample and the instruments, and it sets forth the hypotheses. Two objectives are accomplished in this description of the sample. The first is to review the data on the average students and to indicate ways in which they are distinctly different in attitudes, interests and values from their intellectually superior age-mates. The second is to compare the three grade levels (10, 11 and 12) of superior students one with the other in such a way as to indicate that these superior students, although varying in age, are nevertheless much alike, and that the three grade levels can justifiably be spoken of as a population of superior students. Chapter IV reports the results of the analysis of both the formal and informal instruments on the superior population as these differentiate the three types. From this study we will draw implications in Chapter V that will help us to fashion a more facilitating educational environment, both for those who already designate themselves as creative intellectuals and those who are drawn toward but are not yet fully committed to these types of expressions.

II. INTRODUCTION

1. Frank Barron has stated, "The enduring vogue of the IQ is certainly testament to our natural desire to keep the story simple. . . . The fact is, of course, that intelligence is a complex set of interrelated aptitudes and abilities, some of them verging closely upon the temperamental. . . ." Creativity and Psychological Health (Princeton, New Jersey: D. Van Nostrand Co., Inc., 1963), p. 214.

2. All Lansing high school students whose IQ's were 120 or above were included in the final sample. This group was selected from a larger sample which had been chosen on the basis of teacher recommendation and grade point average. It was felt that 120 IQ was a good base. As Barron (generalizing from his own studies, including those of IPAR, those at the University of Minnesota, the University of Chicago and the National Merit Scholarship Corporation) indicates, " . . . beyond an IQ of about 120, measured intelligence is a negligible factor of creativity, and the motivational and stylistic variables upon which our research has laid such stress are the major determinants of creativity." Ibid., p. 243.

3. Elizabeth M. Drews and John E. Teahan, "Parental Attitudes and Academic Achievement," Journal of Clinical Psychology, Vol. XIII, October, 1957, pp. 328-332.

4. Elizabeth M. Drews, Student Abilities, Grouping Patterns and Classroom Interaction, Final Report of the Cooperative Research Program, 608, U.S. Office of Education, "The Effect of Homogeneous and Heterogeneous Ability Grouping in Ninth Grade English Classes with Slow, Average and Superior Students" (East Lansing: College of Education, Michigan State University, 1963).

5. Over the last ten years, the principal investigator has developed a student interest survey which has been continually refined. In each of these surveys extensive studies of students' in-school and out-of-school activities were made.

6. Over the years as we have worked with gifted adolescents, we have come to agree with the social scientist, Lazarsfeld, who contends that if you want to know what an individual is like you should ask him. Allport also concludes that simple self-appraisal sometimes turns out to be the best of all methods of assessment when populations are normal. Gordon Allport, Pattern and Growth in Personality (New York: Holt, Rinehart and Winston, 1961), p. 411.

7. In a study of approximately 600 ninth graders, we found that the superior students were strikingly more self-confident than the average and slow, and no matter how we modified school situations, this able group gave themselves significantly higher concept-of-self-as-school-learner ratings. These were most realistic ratings in that there was every evidence (on other rating scales) that they liked school better, received better grades, read more books, and planned to continue in school for a greater number of years. (Elizabeth M. Drews, Student Abilities, Grouping Patterns, and Classroom Interaction, op. cit.)

8. Each type was described in positive terms as a hypothetical or ideal individual who might strongly appeal to young people who had certain value orientations. Originally, four type-profiles were indicated; however, the fourth type, rebel, was not checked in sufficient numbers to warrant its use in the major study. (See Appendix for instrument used with students asking that they choose one description which most closely approximated their self-image.)

9. Research done by Holland on intellectually gifted students has shown that self-ratings, as they reflected on their high school accomplishments, originality, or academic achievement predict achievement in college almost as well as a detailed report of the artistic and academic achievement itself in high school. (John Holland, "A Program of Research on the Identification, Motivation, and Training of Talented Students," Technical Report No. 5, Chicago, Illinois: National Merit Scholarship Corporation. Mimeographed.)

10. Jules Henry, Culture Against Man (New York: Random House, 1963), p. 261.

11. Henry comments: "Rome High is committed to two contradictory orientations: fun and scholarship. . . . The athletes . . . set the pace of social life . . . attendance at games is also of critical importance. [But students can get good grades] . . . and not be looked upon with disdain. [However], the function of education has never been to free the mind and the spirit of man, but to bind them. . . . Man demands from his children acquiescence, not originality. [The school cannot accommodate uniqueness or] . . . handle variety . . . instead it can manage only on the assumption of a homogeneous mass. [Thus the school is the carrier of mass culture] . . . culture invades and infests the mind like an obsession . . . in order to engulf the mind so that it will see the world only as the culture decrees that it shall be seen . . . [those who have a] love of knowledge

for its own sake [will have a difficult time in school]. (Jules Henry, *op. cit*., Ch. VII, pp. 182-282).

12. Aldous Huxley, *Island* (New York: Harper and Brothers, 1962).

13. N. J. Berrill (agreeing with the conclusions Roger Williams reached in *Free and Unequal* and *Varied Excellence*) has said, "Human beings vary widely in virtually every character that can be observed or measured [and] the greater the minds the greater the difference. As the brain has grown the differences between one and another are magnified accordingly." (N. J. Berrill, "Human Potential," paper presented at the American Personnel and Guidance Association Annual Conference, San Francisco, March 18, 1964.)

14. Gordon Allport, *Personality* (New York: Henry Holt and Company, 1937), p. 390.

15. Berrill, "Human Potential," *op. cit*.

16. Richard Hofstadter, *Anti-Intellectualism in American Life* (New York: Alfred A. Knopf, 1963).

17. See James S. Coleman, *The Adolescent Society* (New York: Free Press of Glencoe, 1961); John K. Galbraith, *The Affluent Society* (Boston: Houghton Mifflin, 1958); Hofstadter, *op. cit*.; Abraham J. Tannenbaum, *Adolescent Attitudes Toward Academic Brilliance* (New York: Bureau of Publications, Teachers College, Columbia University, 1962).

18. James Baldwin and Joseph Wood Krutch, "The Creative Dilemma, An Appraisal of the Risks and Rewards in the Arts Today," *Saturday Review*, February 8, 1964, pp. 14-17.

19. We have concluded from data on other gifted populations, collected since this study was completed, that the creative intellectual style is increasingly prominent among young Americans. But we also must make clear that in the Middle West the responsible, studious orientation remains the dominant pattern found among able youth. Such a picture is in sharp contrast to many current views of the American adolescent. Jacob and Coleman see him as materialistic and hedonistic. Tannenbaum finds the athlete to be far more acceptable than the student to most young people, and Remmers reports strong anti-scientific as well as anti-intellectual sentiment among our youth. (Philip E. Jacob, *Changing Values in College* (New York: Harper, 1957); Coleman, *op. cit*.; Tannenbaum, *op. cit*.; Herman H. Remmers, *The American Teenager* (Indianapolis: Bobbs-Merrill, 1957)).

20. Donald W. MacKinnon, "Identifying and Developing Creativity," Selection and Educational Differentiation, report of a conference held May 25-27, 1959, Berkeley, California (Center for the Study of Higher Education, University of California, Berkeley, 1959); Paul Heist and Harold Webster, "Differential Characteristics of Student Bodies--Implications for Selection and Study of Undergraduates," Ibid.; Jonathon R. Warren and Paul Heist, "Personality Attributes of Gifted College Students," Vol. 132, Science, August 5, 1960, pp. 330-337.

21. If we were to generalize about the group, it could be described as ethnically assimilated American, religiously conservative Protestant, economically middle class, and culturally Midwestern--more technological in emphasis than agrarian. They were, for the most part, attractive, exuberantly healthy and self-confident. Adolescent rebellion was brewing for some but was still incipient for most.

22. During the 1958-59 school year the grouping study referred to earlier, and which involved approximately 600 ninth graders, was conducted. (Drews, Student Abilities, Grouping Patterns and Classroom Interactions, op. cit.)

III. PROCEDURE

A. Setting*

In a study aimed principally at determining the attitudes, interests and values of able young people, it is necessary to keep in mind the totality of the environment in which the individual lives. This influence is undoubtedly of great importance in the shaping of character and goals, and thus we will review the general social-cultural milieu of Lansing as an introduction to this section of the report.

Lansing, the city in which this experiment was conducted, is a Midwestern city with a population of approximately 120,000 (1963 estimate); the adjoining city of East Lansing has a population of 45,000, including Michigan State University students living on the campus and in the city itself. The tri-county metropolitan area, which includes Ingham, Clinton and Eaton counties, has a population of over 300,000.[1]

The automotive industry provides the major economic force in Lansing, accounting for 83 per cent of the total manufacturing output in 1958.[2] A second major force is government spending (Lansing is the state capital), providing economic support for the 24,000 people employed in state offices. Michigan State University represents a third major economic force, employing a large number of people and contributing approximately 31,000 students (in 1964-65) at all levels to the general consumer economy. The University and state government account for a large number of the professional and white-collar workers in the area. It is important to note that most of the University faculty live in East Lansing and, as a result, there is generally less contact between the young people of Lansing and the University than one might expect.

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*The description of the setting is similar for Reports I, II and III, THE CREATIVE INTELLECTUAL STYLE IN GIFTED ADOLESCENTS.

The predominance of these three economic forces is almost complete as there are few other major enterprises* or important concerns which strongly affect Lansing's economy or employ a large number of people. This kind of community, when compared with a larger metropolitan area, creates for the adolescent a narrowness in the diversity of career opportunities and of life experiences to which he may be exposed. Adolescent boys and girls typically come in contact more or less exclusively with adults, teachers excepted, who occupy the same occupational category as their parents. This restricted exposure very possibly may limit awareness of the wide range of opportunities available to all young people, especially to the intellectually gifted. Even after giftedness in a particular area is demonstrated, it may not be encouraged and it is almost certain that models of excellence will not be available (except in athletics). The result is that the youth with unusual talent or ability may not receive the encouragement or recognition needed for his talent to flourish. Especially, he is apt not to receive special instruction and guidance if he shows unusual intellectual excellence. Ability in athletics or music is much more apt to receive encouragement than outstanding ability in intellectual areas which is often discouraged in the name of social adjustment.

From the standpoint of furnishing the creature comforts and the educational basics, the situation in Lansing is an exceptionally good one. The Lansing citizen is above the national norms economically and educationally. The per capita income for the area was six per cent above the national average in 1958.[4] In 1959, the median number of years of school completed by the parents of 331 average students was 11.5 for fathers and 11.8 for mothers,[5] compared with the national median of 10.6 in 1960.[6] As might be expected, the parents of superior students were even better educated. In the longitudinal superior study, the median number of years completed was 12.4 for the mothers and 12.5 for the fathers of all of the students in the ninth grade having IQ's of 120 or above.[7]

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*In this area there are, as might be expected, a large number of small enterprises. Exposure to these, however, is limited, in part because of the small number of employees. This is especially true of the crafts.

Within the Lansing area, there is a wide variety of cultural and recreational opportunities, and the adjoining town of East Lansing which has the University facilities located there offers outstanding programs of intellectual and aesthetic interest. Although the Lansing metropolitan complex cannot be called a "big city," the number and quality of experiences offered compare favorably with the largest cities. It is possible to attend concerts, art exhibits, dramatic presentations, lectures, and various educationally planned nature exhibits (e.g., the Arboretum park and the horticulture gardens). The University facilities such as the cyclotron, the museum, the planetarium, and various laboratories (the computer center, engineering and agricultural laboratories) are open at convenient hours. Most of the University presentations are reasonably priced and open to the public.[8] The mere existence of a good cultural environment, however, does not mean that many Lansing students do now or will take advantage of the offerings. Our surveys indicate that the vast majority of intellectually gifted Lansing adolescents would like to participate in the intellectual and artistic culture but that few do this.

In contrast, the use of the numerous recreational areas around Lansing is exceptional. Lansing provides several large parks with a variety of learning experiences. For example, the Arboretum Park has a natural history museum. The majority of the families in the area seem to find opportunity to use these facilities in addition to the lakes and wooded areas that surround the tri-county area. However, the use is primarily recreational and the children are more apt to know how to fish than to identify surrounding flora and fauna.

Despite the fact that most Lansing adolescents are not aware of or do not participate in the seemingly accessible cultural offerings, they are aware of the arts and many of the intellectually gifted, as we have noted, would like to become consumers in this area. Little doubt exists but that when a particular activity is valued by even a cluster within a peer group, that kind of activity will flourish. Teachers who have encouraged such activities have always found responsive students,[9] but our contention is that much more effort needs to be expended to help students participate in the intellectual and aesthetic aspects of their culture.

B. Design

A research design was developed to delineate the characteristics of intellectually superior* high school students, in particular those characteristics which differentiate three profile types: creative intellectual, studious, and social leaders. These distinctive types will be discussed in greater detail in a later section. The subjects of the research were superior boys and girls in the tenth, eleventh and twelfth grades in the three Lansing public high schools.* The students were then assigned to the three profile groups on the basis of self-classification: each student was asked to choose one of three descriptive paragraphs which best described himself. Throughout the study, emphasis was placed on describing the differences between the profile groups in the major population without consideration being given to grade level and sex.**

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*The study was designed to include a cross-sectional sample of students, including average and slow, at grade eleven to provide contrast for the findings on the gifted. Data on the slow students were not valid due to the problems they encountered in reading. In Chapters III and IV the average students are included in the tables and comparisons with the gifted have been made.

The sample will be described by drawing a contrast between two eleventh grade groups, one average in ability and the other superior. Average students will be used only as a point of reference, i.e., to give the reader a view of the relative competence as well as the attitudes, interests and values of the more gifted students.

C. Selection of the Sample

In the fall of 1960 a list of approximately 200 superior tenth, eleventh and twelfth grade students, with Stanford-Binet Intelligence Test scores of 120 or higher, was compiled from school files and from our own records.*** About one-half of the students on this list had been in previous studies made by the investigator. The eleventh graders had been in a study of ability grouping[10] when they were in the ninth grade.

In order to enlarge this sample, an additional group of about 300 students, selected as superior by the schools, was obtained. Since Stanford-Binet scores were not available for the majority of the new group, California Mental Maturity scores were used as a second criterion measure.* All students with California Mental Maturity scores of less than 120 were later excluded from the study unless there were Stanford-Binet scores equivalent or higher available for them. This additional criterion reduced the new group to 206, resulting in a population of 406 superior students.

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*Eastern, Everett and Sexton high schools.

**However, when these variables present findings significantly different from those described for the larger groups, the results will be reported.

***The Principal Investigator had been Director of Psychological Services in Lansing from 1949-1957 and had done a number of studies on gifted young people both while she was in the schools and after she joined the staff of Michigan State University.

Table 1 reports the distribution of students by grade and sex. While the total or maximum sample consists of all students tested with an IQ of at least 120, the minimum sample used consists only of those students for whom all major data were complete.

In addition, a sample of 189 average eleventh grade students, 79 boys and 110 girls, was tested as a comparison group. In the ninth grade these students had also been in the investigator's ability grouping research[11] and at that time had been randomly selected from school files on the basis of having California Mental Maturity Test scores between 85 and 115.

TABLE 1

MAXIMUM AND MINIMUM SAMPLE** OF SUPERIOR TENTH, ELEVENTH AND TWELFTH GRADE BOYS AND GIRLS

	Boys		Girls		Total	
	Max.	Min.	Max.	Min.	Max.	Min.
Grade 10	72	68	79	76	151	144
Grade 11	50	48	77	76	127	124
Grade 12	67	64	61	57	128	121
All Grades	189	180	217	209	406	389

*No table is given to indicate range and standard deviation in intelligence scores inasmuch as two different selection instruments were used. Both the Stanford-Binet and the California Mental Maturity tests have standard deviations of fifteen and thus it is felt that the two groups of students do represent somewhat comparable samples and that together they make up a distinctly superior population.

**The maximum sample includes all students tested

D. Instruments

In November of 1960, all students were given two types of testing measures. The first consisted of formal standardized tests for both skills and attitudes. The second was an informal instrument devised by the principal investigator. This was a questionnaire which was used to sample family background, student interests and attitudes. Background information was also obtained from cumulative records kept by the schools.

1. Formal Measures

The formal instruments used include the American Council on Education Critical Thinking Test, Form G, the Rokeach Dogmatism and Rigidity Scales, the Allport-Vernon-Lindzey Study of Values (A-V-L)* and the Omnibus Personality Inventory (OPI).

The American Council on Education's Critical Thinking Test, Form G, was used to measure students' skill in handling problem-solving situations. This test was developed at Michigan State University as a part of an inter-university project, entitled "The Co-operative Study of Evaluation in General Education," which was directed by Paul Dressel. The items used in the instrument were devised and tested by project workers at twenty different institutions, and the test was finally constructed by Dr. Dressel. The instrument is a 52-item scale of objective questions designed to measure the main abilities thought to be involved in the problem-solving aspect of critical thinking--the ability to recognize and define a problem,

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having an intelligence quotient score of at least 120. The minimum sample consists of only those students for whom all major data were complete.

*The A-V-L was not used in the description of the population due to problems of reading comprehension encountered by average students.

to select information pertinent to its solution, to recognize stated and unstated assumptions, to formulate and evaluate hypotheses, and to judge the validity of inferences from the evidence given.

The Rokeach Dogmatism and Rigidity Scales were also a part of the test battery. Rokeach has distinguished between the two ways of being resistant to change in the following manner:

> . . . [Rigidity] refers to the resistance to change of single beliefs [or sets or habits], and the second [dogmatism] refers to the resistance to change of systems of belief.[12]

The Rigidity Scale is composed of 22 items; the Dogmatism Scale (Form E) contains 40 items. Items are worded so that the subject can respond on a six-point scale ranging from "I agree very much" to "I agree very little." The lower a student's score, the less dogmatic and rigid the scales indicate that he is.

The Study of Values (A-V-L), also a personality inventory, measures six value orientations.* The test is a widely used one which, in the words of its authors:

> . . . aims to measure the relative prominence of six basic interests or motives in personality: the Theoretical, Economic, Aesthetic, Social, Political and Religious. The classification is based directly upon Edward Spranger's Types of Men, a brilliant work which defends the view that the personalities of men are best known through a study of their values or evaluative attitudes.[13]

The test is constructed on a forced choice basis, so that high scores on any one scale necessitate low scores on some other scale or scales. The six scores can therefore be interpreted only in relation to each other; a high score on a scale indicates only that this orientation is more highly valued than the orientation on which a subject received a low score. Heist and his colleagues at the Center for the Study of Higher Education have noted a pattern of scoring on the A-V-L which shows that highly creative individuals who take the test have high Theoretical and Aesthetic scores and low Economic and Political scores.

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*This test was published first as the Allport-Vernon Study of Values in 1931 and revised as the Allport-Vernon-Lindzey Study of Values in 1951.

The six value orientations measured on the A-V-L are:

> Theoretical: This orientation characterizes a person with a dominant interest in the discovery of truth; one who is concerned with cognitive approaches to reality; and one who is critical, rational, and given to intellectualizing. (Findings at both Berkeley Centers show interest in scientific fields to be a strong correlate of this orientation.)
>
> Economic: The person high on this scale is interested primarily in the utilitarian and the practical and in the accumulation of material goods and its associated activities.
>
> Aesthetic: The aesthetic person places great value on form and harmony. His major orientation is toward a pleasing organization of sensory experience, and toward the artistic aspects of the environment.
>
> Social: The high scorer on this scale is oriented toward people as such without regard to theoretical, aesthetic or practical attitudes, which he may regard as cold and inhuman.
>
> Political: The political value does not necessarily indicate interest in the field of politics, but chiefly an interest in power and influence over others. The person who scores high on this scale likes the struggle and competition with which power is commonly associated.
>
> Religious: The person scoring high on this scale is something of a mystic, seeing the highest values in a search for the meaning of life and in comprehension of the cosmos as a whole.

The Omnibus Personality Inventory (OPI) was constructed by Paul Heist and Phoebe Williams in 1957 at the Center for the Study of Higher Education in Berkeley, California. The purpose of the OPI varies from that of many personality tests in that it measures motivation to learn and openness to psychological growth rather than psychopathology. The items are clustered into a number of personality scales that are considered by the Berkeley researchers to be particularly pertinent to the study of intellectual and psychological growth in college students. In our earlier research the instrument appeared to be equally valuable to measure the attitudes and attitude change of able high school students. There are six scales used in this study: Originality, Complexity, Estheticism, Social Introversion, Thinking Introversion and Social Maturity. Brief descriptions of the attributes that these scales measure are given below:

> Originality: The O scale, adapted from research by Barron and Gough at the University of California, measures a tendency toward highly organized but individual ways of reacting to the environment. Characteristics of high scorers are independence of judgment, freedom of expression, rebelliousness, rejection of suppression and novelty of insight.
>
> Complexity: The Co scale, adapted from an earlier instrument developed by Barron, distinguishes between people who perceive and react to complex aspects of their environment and those who generally react to more simple stimulus patterns. High scorers are more independent, liberal, critical, unconventional, and potentially are more original and creative: they welcome the new and different in their experiences. Low scorers tend to be compliant, conservative, acceptant of authority and tradition, and simpler in their organization and perceptions.
>
> Estheticism: High scorers on this Es scale find value in form and relationships and seek major satisfactions in the "artistic episodes of life" as these are expressed by literature as well as by art and music.
>
> Social Introversion: High scorers on the SI scale are not given to affiliation (sociability) and exhibition. Many are shy and find it hard to speak out. They tend toward a scholarly orientation and thus prefer the theoretical and abstract to the applied and practical. Thus they are not like "Y" or personnel directors or

salesmen, but may easily resemble mathematicians or scholars.

Thinking Introversion: On the TI scale, derived from work conducted by Catherine Evans and T. R. McConnell, high scores indicate a preference for reflective thought, particularly thought of an abstract nature. High scorers are interested in ideas and concepts, and they tend to be less influenced by external conditions and commonly professed ideas than are low scorers.

Social Maturity: The SM scale is a measure of change--breaking away, being different. A high score indicates a strong drive for independence and a need to achieve. It is related to non-authoritarianism, maturity and sophistication. In addition, high scorers are unromantic and uncynical, tolerant and undogmatic, uncompulsive and unconventional, and genuinely curious, not rule-bound. They are like the psychologist and social worker and not like the mortician, purchasing agent and banker.

2. Informal Measures

The Student Interest Survey III (SIS III), developed by the investigator, was in the form of a questionnaire which elicited information on the students' family backgrounds, current interests and activities, attitudes toward school and learning and plans for the future.

The last part of the SIS III was a series of three descriptive paragraphs from which the students were instructed to choose the one that described them best.

I

I am what people generally call a good student. In fact, many say I am the studious type. I try to get my work in on time and feel guilty if I don't. Deep down I feel that people who put things off are lazy or disorganized. Most people think I am hard-working and well-organized but I never quite measure up to my own standards, although I do study hard. I think good grades are important, I always try to do my best, and it matters to me what my teachers think because I admire many of them. If they mark me down or criticize me I get upset. In the summer or after school I often work since this helps prepare me for the future. Besides, I can use the money. This plus all of my school work means that I don't have much time to be frivolous and that I can't read for fun as much as I'd like.

II

You might say that I lean toward the intellectual type. My interests include almost all areas of knowledge and the frontier or avant-garde material in those areas. I enjoy art and drama, I like to listen to good music and most of all I like to read and think. Books are my private passion. They've kept me up oftener and later than my dates have. However, studying texts and school assignments often leaves me cold. To put it bluntly, I hate to memorize a list of facts or follow dull and unimaginative directions cookbook style unless this all gets me to a point where I want to be. I hate to say this, but some school work seems pointless. Working, now or later, just for money doesn't have much appeal. Of course, I don't really plan to starve in a garret but wearing the same clothes and eating simply would be worthwhile if I could, in this way, free myself to be truly creative or to discover something of value.

III

To me the most important thing is to have a good personality and be friendly. Along with this I want to look sharp (have nice clothes and be well groomed) and, of course, I'd like to have natural good looks, too. Doing things of a social nature--going to parties and dances--are the most important activities for me. I like people and I want them to like me. Doing well in school work is O.K. but it is not nearly as important for the future as a good personality, good looks, and general ability to get along. These are the main things to get from school. I don't think a person needs to be ashamed of wanting to be successful. I like to help run things now and I want to be a leader in social affairs when I'm an adult. Similarly, I see nothing wrong in material success. In fact, I am looking forward to having a good income, having lots of friends and a nice home. I think it's fine to do things for other people, although I wouldn't want to sacrifice myself. Sometimes people who are concerned about the unfortunates in the world are radical and over-idealistic.

These paragraphs were later designated as Studious (I), Creative Intellectual (II) and Social Leader (III). The choice of self-description was used as the criterion for grouping the students into three profiles for the analysis of data. Other questions dealing with interests and activities were formulated with these profiles as a guideline to provide more information about self-concept and motivation to learn. A major part of the SIS III was primarily concerned with the choice of ideal school and teacher. A wide range of interests and behaviors is represented in this measure with predispositions of the three types as these had been revealed in the pilot study.

The SIS III served three main purposes in the present study. The first was the compilation of factual background material. The second purpose, represented by the profile paragraphs, was to provide a statement of self-image that could be used in the analysis of data. Finally, the SIS III provided an instrument from which hypotheses could be generated for future study of the able student.

E. Description of the Sample

In order to describe more clearly the characteristics of the sample, data are reported for the comparison group of average students as well as for the superior students. Most of these data were obtained in 1960-61, but some were collected two years previously when the eleventh graders were in the ninth grade. It was felt that such variables as family background would change very little in two years, so that the older data would still be sufficiently relevant to merit reporting. However, all data may be assumed to have been collected in 1960-1961 unless we indicate otherwise. Information is presented for the total superior sample (grades 10, 11 and 12 combined), the eleventh grade superior group separately, and the eleventh grade average students. In this way, the average students are compared with classmates in the same grade, and the eleventh grade superior students are shown to be representative of the other superior students.

Intelligence: As was already described in "Selection of the Sample," all the superior students in the population had IQ's of 120 or higher on the Stanford-Binet

Intelligence Test or the California Mental Maturity Test.* The average students, however, had CMM IQ's ranging from 85 to 115.

Grade Point Average (Table 2): The grade point average data follow the same trend as intelligence. The superior students achieved slightly higher than a B average, with the average receiving somewhat above a C average. For both groups the girls received higher grades than did the boys.**

TABLE 2
MEAN GRADE POINT AVERAGES[a]
FOR SUPERIOR AND AVERAGE BOYS AND GIRLS

	Superior (Grades 10, 11, 12)	Superior (Grade 11)	$\underline{t}^b$	Average (Grade 11)
Boys	3.08	3.04	**	2.23
Girls	3.41	3.36	**	2.37
Total	3.26	3.37	**	2.31

[a] Averages are on a four-point system: A=4, B=3, C=2, D=1.

[b] One-tailed t's were used in comparing adjacent means.

**$p_t < .01$.

Parents' Education and Socio-Economic Status (Table 3): In general, parents of superior students were better educated than parents of average students--the parents of superior students had usually completed high school, whereas average students' parents had usually completed the eleventh grade. Superior students also came from higher socio-economic level homes as measured by the Warner Index of Status Characteristics[14] applied to their fathers' occupations. Almost half of the fathers of superior students held professional, managerial and other higher-level white collar jobs. In contrast, average students' fathers were more apt to be blue collar (mostly skilled and semi-skilled) and lower-level white collar workers.

---

*Means are not given since both group and individual tests were used to assess intelligence.

**Most research studies have indicated that girls rather consistently get better grades throughout their school years. Our study was no exception.

TABLE 3

MEDIANS FOR PARENTS' EDUCATION AND SOCIO-ECONOMIC STATUS FOR SUPERIOR AND AVERAGE STUDENTS

	Superior (Grades 10, 11, 12)	Superior (Grade 11)	U[a]	Average (Grade 11)
Fathers' Education[b]	--[c]	12.5[d]	*	11.5[d]
Mothers' Education[b]	--[c]	12.4[d]	*	11.8[d]
Socio-Economic Status[e]	3.35	3.0 3.0[d]	*	4.6[d]

[a] The one-tailed Mann-Whitney U Test was applied to a random sample of 120 average and 80 superior eleventh graders.

[b] Reported as number of grades completed (e.g., 12.0 would indicate graduation from high school).

[c] The 1960-61 data were available only in a coded form, and thus not comparable to the other data. However, even in this form the eleventh grade superior students appeared representative of the total superior population.

[d] These data were collected in 1958-59.

[e] According to the Warner Index of Status Characteristics, as applied to fathers' occupation. The index ranges from "1" (high level professional or business executive) to "7" (unskilled laborer or domestic servant).

*$p < .01$.

Family Size and Ordinal Status (Table 4): Family size also varied between the average and superior students, with the superior students coming from smaller families. The median number of children in the family was less than three for superior students, while it was more than three for average students. In addition, superior students were more often the oldest child than were average students. Half of the superior group were first-born or only children, as contrasted to the average students of whom only about a third were in this category.

TABLE 4

MEDIAN FAMILY SIZE AND ORDINAL STATUS
FOR SUPERIOR AND AVERAGE BOYS AND GIRLS

	Superior (Grades 10, 11, 12)	Superior (Grade 11)	Average (Grade 11)
Median Family Size[a]	2.74	2.63	3.4[b]
Ordinal Status (per cents)			
First or only child	50.50%	50.00%	36.07%[b]
Middle child	25.00	25.40	32.54[b]
Youngest child	24.50	24.60	31.37[b]

[a] Family size refers to the number of children in the family.

[b] These data were collected in 1958-59.

Profiles (Table 5): For superior students, the most frequently chosen profile was studious, with about 60 per cent of the total superior group of each grade selecting it as most like themselves. The rest of the superior group was divided about equally into the creative intellectual and social leader profiles, with slightly more choosing creative intellectual. The pattern for the average students, however, was extremely different. Over half of the average picked social leader, with about a third choosing studious and the remainder choosing creative intellectual. The social leader profile, while least important for the superior students, was most important for the average students.

TABLE 5

PERCENTAGES OF PROFILE DISTRIBUTION FOR SUPERIOR AND AVERAGE BOYS AND GIRLS

	Superior (Grades 10, 11, 12)	Superior (Grade 11)	X^{2a}	Average (Grade 11)
Boys (N)	(184)	(49)		(79)
Studious	56.0%	55.1%	*	35.4%
Creative Intellectual	23.4	20.4		15.2
Social Leader	20.6	24.5		49.4
Girls (N)	(216)	(77)		(110)
Studious	63.0%	66.2%	**	30.9%
Creative Intellectual	20.8	18.2		11.8
Social Leader	16.2	15.6		57.3
Total (N)	(400)	(126)		(189)
Studious	59.8%	61.9%	**	32.8%
Creative Intellectual	22.0	19.1		13.2
Social Leader	18.2	19.1		54.0

[a] The distributions for average and superior eleventh graders were compared by chi square.

*$p < .02$.

**$p < .0005$.

Critical Thinking (Table 6): The superior students did very well on this test, which assesses the ability to solve problems requiring the use of logic. This is evidenced by their averages of over 35, much higher than the mean of 29 for Michigan State University freshmen in 1959. The average students, with mean scores of about 21, appear to be much less competent in solving problems of this nature.

TABLE 6
MEANS OF ACE CRITICAL THINKING TEST, FORM G FOR SUPERIOR AND AVERAGE BOYS AND GIRLS

	Superior (Grades 10, 11, 12)	Superior (Grade 11)	t^a	Average (Grade 11)
Boys	35.15	37.42	*	22.11
Girls	35.24	38.26	*	20.55
Total	35.20	37.92	*	21.22

^{a}One-tailed *t*'s were used in comparing adjacent means.

$^*p_t < .0005$.

Dogmatism and Rigidity (Table 7): On the Rokeach scales, a high score indicates a more dogmatic or more rigid attitude. Thus, since the superior students scored lower than the average students on both the Dogmatism and Rigidity Scales, the superior students generally would seem to be more tolerant, less authoritarian, and more open to changes in their habits and beliefs.

TABLE 7
MEAN ROKEACH DOGMATISM AND RIGIDITY SCORES FOR SUPERIOR AND AVERAGE BOYS AND GIRLS

	Superior (Grades 10, 11, 12)	Superior (Grade 11)	t^a	Average (Grade 11)
Dogmatism				
Boys	165.49	164.42	*	173.14
Girls	163.91	160.84	*	171.88
Total	164.63	162.26	*	172.43
Rigidity				
Boys	98.29	97.30	*	102.09
Girls	99.37	98.39	*	103.26
Total	98.87	97.96	**	102.76

^{a}One-tailed *t*'s were used in comparing adjacent means.

$^*p < .05$.

$^{**}p < .005$.

Omnibus Personality Inventory (Table 8): On the five scales (*Originality*, *Complexity*, *Social Maturity*, *Estheticism*, *Thinking Introversion*), indicating personal maturity and intellectual predisposition, the superior students are sharply differentiated from the average*--they are from .3 to .9 standard deviations higher on all five. The means of the superior students are only slightly lower than those usually obtained by college students. In addition, the superior students scored significantly lower on the *Social Introversion* scale than did the average, indicating that they show a more active interest in people.

TABLE 8

MEANS[a] OF *OMNIBUS PERSONALITY INVENTORY* SCALES FOR SUPERIOR AND AVERAGE BOYS AND GIRLS

	Superior (Grades 10, 11, 12)	Superior (Grade 11)	*t*[b]	Average (Grade 11)
Boys				
Originality	44	45	***	37
Complexity	50	50	**	46
Social maturity	45	45	***	39
Estheticism	47	46	**	42
Thinking introversion	47	46	***	40
Social introversion	52	50	***	55
Girls				
Originality	47	47	***	38
Complexity	50	50	**	47
Social maturity	46	46	***	37
Estheticism	52	51	***	45
Thinking introversion	51	49	***	41
Social introversion	47	45	***	50
Totals				
Originality	46	46	***	37
Complexity	50	50	***	47
Social maturity	45	46	***	38
Estheticism	50	49	***	43
Thinking introversion	49	48	***	41
Social introversion	50	47	***	52

*College students usually score from .5 to 1.5 standard deviations higher on these scales than do high school seniors.

[a] Means are in terms of standard scores for college students.

[b] One-tailed *t*'s were used in comparing adjacent means.

**$p < .05$.

***$p < .0005$.

Summary: In addition to high intelligence, the superior students as a group can be described as young people who do good work in school, come from relatively small middle-class families, and whose parents have usually completed high school. The average students, in contrast, do not do so well in school, come from larger families, and have parents who are less well educated. It is apparent that the superior students are significantly different from the average in certain skills, attitudes and interests. For example, in choosing their profile orientations, the superior students show a marked preference for the profile types concerned with scholarly and intellectual interests (studious and creative intellectual), whereas more than half of the average students prefer the nonacademic profile (social leader). The superior group scores significantly higher than the average students on a test which assesses critical thinking, and lower on measures of dogmatism and rigidity. In relation to qualities such as motivation to learn and openness to psychological growth, superior students obtain markedly higher scores. It is also clear that the eleventh grade superior group is quite representative of the entire superior sample on these variables. The differences between the eleventh grade superior students and the total population (the tenth, eleventh and twelfth graders combined) are negligible.

F. Hypotheses

As might be expected, the description of the sample showed that the average students were much less interested in intellectual matters than were the superior students. They scored lower on the Critical Thinking Test and the OPI scales, and a large percentage chose the nonacademic profile (the social leader). In other words, superior students taken as a whole are different from average students in many ways that are important for school performance. However, the focus of the remainder of this study is not on these differences but is instead an investigation of the varying characteristics within the superior group. Results of previous research by the investigator, especially the pilot study described in the introduction, gave indications of striking differences in intellectual motivation among gifted students themselves. Those students choosing the creative intellectual profile proved most interested in intellectual areas and those choosing the social leader profile, least interested. The profile choice, it was hoped, would prove to be a valid check of the students' self-images.*

From these differences observed among the superior students as well as between superior and average students, and also from the results of other research** concerned with creativity in college students and adults, the following specific hypotheses were developed for this research:

I. It was hypothesized that the creative intellectuals would score higher on the American Council of Education's Critical Thinking Test than the studious, the studious higher than the social leaders, and all three superior groups would score higher than the average students.

II. It was hypothesized that the creative intellectuals would score lower on the Rokeach Dogmatism and Rigidity Scales than the studious, the studious lower than the social leaders, and all three superior groups would score lower than the average group.

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*In Chapter V, "Results and Discussion," no analysis was made due to lack of funds. Results on slow students were too inaccurate to include in any form. The form of the present report was discussed in detail with Dr. William Carricker, and we have made every effort to make our presentation in the pattern which was agreed upon.

**Institute of Personality Assessment and Research and Center for the Study of Higher Education, both at Berkeley, California.

III. It was hypothesized that creative intellectuals would receive significantly higher scores on the Theoretical and Aesthetic scales of the Allport-Vernon-Lindzey Study of Values and significantly lower scores on the Political and Economic scales than the social leaders. The studious scores would be in the direction of the creative intellectual scores but lower.

IV. It was hypothesized that creative intellectuals would score significantly higher on the Originality, Complexity, Estheticism and Thinking Introversion than the social leaders, and that the studious scores would be in the same direction as the creative intellectual scores but lower.

III. PROCEDURE

1. Statistics supplied by John Thalen, Michigan State University Professor Emeritus of Sociology and Demographer in the Institute for Community Development.

2. John L. O'Donnell et al., Economic and Population Base Study of the Lansing Tri-County Area: An Inter-Industry Relations Analysis (East Lansing, Michigan: Bureau of Business and Economic Research, College of Business and Public Service, Michigan State University), Library of Congress Catalog No. 60-62883.

3. Sidney L. Pressey, "Concerning the Nature and Nurture of Genius," The Scientific Monthly, V. 81, September, 1955, pp. 123-129.

4. O'Donnell et al., op. cit.

5. Elizabeth Monroe Drews, Student Abilities, Grouping Patterns, and Classroom Interaction; Final Report of the Cooperative Research Program, 608, U.S. Office of Education, "The Effect of Homogeneous and Heterogeneous Ability Grouping in Ninth Grade English Classes with Slow, Average and Superior Students" (East Lansing: College of Education, Michigan State University, 1963).

6. Statistics supplied by John Thalen, op. cit.

7. Drews, op. cit.

8. The Lansing-East Lansing area has approximately 200 churches, several active and thriving little theatre groups which present both contemporary plays and classical drama, and a large civic center in the city of Lansing which not only has a wide variety of ongoing programs but also attracts numerous conventions to the city. The Lansing park system is reputed to be among the finest in the country. There are some 63 parks in the Greater Lansing area, including a zoo, an arboretum, specimen gardens, and 46 scheduled summer playgrounds. There are also 74 baseball diamonds, two outdoor swimming pools, ten indoor pools and seven public golf courses. The Y.M.C.A. and the Y.W.C.A. offer a number of programs for both adults and young persons. The school system in Lansing provides a wide variety of evening courses which allow any interested citizen (except teenagers) to take subjects ranging from pottery making to "great books" for a minimal fee. At the heart of the city is a fine new public library operated by the public

schools, and nearby is the Michigan State University Library and the Michigan Historical Museum. The State Capital itself and other public buildings are near the city center. On the Michigan State University campus five miles away there are extensive historical and natural science displays in attractive museums.

Art exhibits are always available and there is a new art museum in the Kresge Art Center located on the University campus. In the area there are nine motion picture theaters, including several that exhibit foreign films. There are five radio and three television stations (including an educational TV station) in the area, and the city of Lansing supports a symphony orchestra. In addition, the University offers a large number of theatre, lecture and concert events; and during the year some of the most outstanding ballet, opera and theater groups in the world appear. Educational opportunities are not limited to the University; there is also a large community college and a business university.

9. Hughes Mearns, Creative Power: The Education of Youth in the Creative Arts (New York: Dover Publications, Inc., 1958).

10. Drews, op. cit.

11. Drews, Ibid.

12. Milton Rokeach, The Open and Closed Mind: Investigations into the Nature of Belief Systems and Personality Systems (New York: Basic Books, Inc., 1960), p. 183.

13. Gordon W. Allport, Philip E. Vernon and Gardner Lindzey, Study of Values: A Scale for Measuring the Dominant Interests in Personality (Boston: Houghton-Mifflin Co., 1960), p. 3.

14. W. L. Warner et al., Social Class in America (Chicago: Science Research Association, 1949).

IV. RESULTS AND DISCUSSION

The results of the analysis will be reported in three sections: the standardized tests (Critical Thinking, Rokeach, A-V-L, OPI), the OPI item analysis and the Student Interest Survey data. The data obtained from the standardized tests, which will be reported first, are presented in relation to the hypotheses. Within each section, comparisons are made between the profile groups. The three grades (10, 11 and 12) are combined, although the boys and girls are reported separately. The mean data from the total average group (where data are available from the sample description) are included although they are not analyzed.

A. Standardized Tests

It was hypothesized that the creative intellectual would score higher than the studious, the studious higher than the social leader, and all three superior groups higher than the average students on the American Council of Education's Critical Thinking Test, Form G. The scores reveal significant differences between the three profiles in the direction predicted. The creative intellectual score was highest, followed by the studious and the social leaders. All three scores differed greatly from the average although a test of difference was not performed.*

The results supported the first hypothesis and indicated that the creative intellectuals were more competent in the problem solving and analytic skills examined by the test. The social leaders proved the least skillful of the three groups on problem solving.

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*See Chapter III for comparisons of average students with the total superior group.

TABLE 1

MEAN SCORES FOR SUPERIOR STUDENTS BY PROFILE FOR THE ACE CRITICAL THINKING TEST, FORM G

		Superior Students				
	(Average Students)°	Studious		Creative Intellectual		Social Leader
Boys	(22.11)	34.41	•	38.16	•	33.74
Girls	(20.55)	35.37	•	37.62	•	31.66 •[a]
Total	(21.22)	34.95	•	37.89	•	32.74 •[a]

°Not treated statistically but included for comparison.

•Indicates a significant difference of .05 probability level between the two adjacent means utilizing a one-tailed _t_.

•[a] Refers to a comparison of Social Leader and Studious.

On the Rokeach _Dogmatism_ and _Rigidity Scales_, it was hypothesized that the creative intellectuals would receive lower scores than the studious and that the studious would receive lower scores than the social leaders. The data from the _Dogmatism Scale_ partially support this hypothesis. The creative intellectual scores were significantly lower than those obtained by the social leaders. The data from the _Rigidity Scale_ also only partially support the hypothesis. The creative intellectuals received the lower scores and these were significantly lower than those obtained by the studious and social leader groups whose scores were almost identical.

The scores on the Rokeach _Dogmatism Scale_ supported the hypothesis that the creative intellectuals were quite open to change of their belief systems while the social leaders were less open. The _Rigidity Scale_, which refers to resistance to change of a single belief on habit, showed somewhat different results than were anticipated. The creative intellectuals did prove most open in this respect, but the other profiles were nearly equal and more resistant to the change of single beliefs.

TABLE 2

MEAN SCORES FOR SUPERIOR STUDENTS BY PROFILE FOR THE ROKEACH DOGMATISM AND RIGIDITY SCALES

		Superior Students				
	(Average Students)°	Studious		Creative Intellectual		Social Leader
Dogmatism						
Boys	(173.14)	165.60		161.30	*	169.92
Girls	(171.88)	164.12		162.16		165.28
Total	(172.43)	164.76		161.74	*	167.70
Rigidity						
Boys	(102.09)	100.67	*	90.58	*	100.55
Girls	(103.26)	101.38	*	92.64	*	100.14
Total	(102.76)	101.07	*	91.62	*	100.36

°Not treated statistically.

*Indicates a significant difference of .05 probability level between the two adjacent means utilizing a one-tailed t.

The third hypothesis dealt with the Allport-Vernon-Lindzey Study of Values, predicting higher scores on the Theoretical and Aesthetic scales for the creative intellectuals and lower scores on the Political and Economic scales than the social leaders. The research done at the Center for the Study of Higher Education and at the Institute for Personality Assessment and Research both indicate that more creative people receive relatively high scores on the Theoretical and Aesthetic scales and low scores on the Political and Economic scales. For this reason our hypothesis dealt only with four scales. The six scales (including the Social and Religious scales) are interrelated so that a high score on one scale necessitates a low score on one or more others. The rank of the scales for the A-V-L indicates only a relative value system (i.e., preference for one over another, not the depth of preference).

On the Theoretical scale, the creative intellectuals scored significantly higher than both the social leaders and the studious. This scale, representing concern with cognitive approaches to reality and desire to "discover the truth," showed great differences between the boys and girls. Studious and creative intellectual boys both received higher scores than any other group. While the girls' scores are generally lower on this science-oriented scale, the creative intellectual girls were significantly more theoretically oriented than the social leader girls.

Creative intellectuals were also less concerned with the practical or utilitarian, less materialistically oriented, than either the studious or the social leaders as evidenced by their lower scores on the A-V-L Economic scale. Creative intellectual girls scored significantly lower than either the studious or the social leaders: for them it was the least important of the six scales. The boys scored much higher than the girls, and, although the trend was for creative intellectuals to score lower than the studious or social leaders, these differences were not significant for the boys. On the Aesthetic scale, creative intellectual girls received the highest scores in the group, scoring significantly higher than the studious and somewhat higher than the social leaders. In more specific terms, they were "more influenced by perceptual phenomena," and "more concerned with harmony and form." Although boys tend to be much less aesthetically oriented than girls, creative boys scored significantly higher (on this traditionally feminine scale) than either studious or social leader boys.

On the Social scale, which indicates an orientation toward being with people (but with little emphasis on social conscience), the creative intellectual boys received the lowest score and were significantly lower than the studious or social leader boys. Girls generally scored higher than boys.* While the creative intellectual girls did receive lower scores than studious or social leader girls, there was no significant difference.

Again the hypothesis was generally supported, although, in several cases, there were greater differences between boys and girls than between the profiles. However, the creative intellectuals scored significantly higher on the theoretical and aesthetic scales and significantly lower on the economic and political scales than the social leaders.

High scorers on the Political scale tend to be power-oriented; they think in terms of "winning friends and influencing people." As might be expected, the social leaders were the group most interested in dominating others. The creative intellectual girls were significantly less power-oriented than studious girls, while studious girls, in turn, were significantly less power-oriented than social leader girls. Although not significant, the same trends are evident for boys, with creative intellectuals scoring somewhat lower than studious or social leaders.

Girls, in general,** score higher on the Religious scale than on any of the other scales of the A-V-L, and the gifted girls in this study were no exception. Among the girls, however, both creative intellectual girls and studious girls valued "a search for the meaning of life and in comprehension of the cosmos as a whole" significantly more than social leader girls. Again, the boys scored in the same directions but the differences were too slight to be significant.

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*The norms for women in the A-V-L test booklet itself support this, as does some of the CSHE research.

**The norms for women on the A-V-L test booklet support this.

TABLE 3

MEAN SCORES FOR SUPERIOR STUDENTS BY PROFILE FOR THE ALLPORT-VERNON-LINDZEY STUDY OF VALUES

	Superior Students					
	Studious		Creative Intellectual		Social Leader	
Boys						
Theoretical	46.42		46.77	•	43.97	•[a]
Economic	44.07		42.02		44.55	
Aesthetic	31.64	•	36.47	•	33.42	
Social	33.75	•	31.67	•	34.76	
Political	44.88		43.37		44.97	
Religious	39.40		39.84		38.39	
Girls						
Theoretical	36.37		38.49	•	35.17	
Economic	38.70	•	33.20	•	39.06	
Aesthetic	37.50	•	42.16		39.20	
Social	41.25		40.62		41.51	
Political	39.67	•	37.31	•	42.17	•[a]
Religious	46.62		47.38	•	42.91	•[a]
Total						
Theoretical	40.70	•	42.53	•	39.75	
Economic	41.01	•	37.51	•	41.92	
Aesthetic	34.97	•	39.38	•	36.19	
Social	38.03		36.76		38.00	
Political	41.92	•	40.27	•	43.63	•[a]
Religious	43.51		43.69	•	40.56	•[a]

•Indicates a significant difference of .05 probability level between the two adjacent means utilizing a one-tailed *t*.

•[a]Refers to a comparison of Social Leader and Studious.

Omnibus Personality Inventory (Table 4): The Omnibus Personality Inventory (OPI) is an assemblage of personality scales, originally designed for college students, that primarily measure intellectual motivation and psychological maturity. The assumption with college students is that those individuals who receive generally high scores have "a greater degree of maturity and more of an interest in intellectual matters."* Unlike the A-V-L, it is possible on this instrument for a student to receive a high score on every scale (as, indeed, the superior students do when compared with the average).

Five of the six scales used in this study significantly differentiated creative intellectuals from both studious and social leaders, irrespective of sex. These five scales were Originality (tending toward highly organized but individual ways of reacting to the environment), Complexity (perceiving and reacting to complex aspects of the environment), Social Maturity (responding to social situations in sophisticated and unconventional manners and a willingness to break with the family), Estheticism (indicating an interest in artistic, esthetic matters and activities), and Thinking Introversion (indicating an interest in ideas and reflective thought). The Social Introversion scales showed no significant differences.

It is interesting to note that on all five of these scales, the creative intellectual girls scored higher than the creative intellectual boys, although among the social leaders the boys and girls scored very similarly. Moreover, on three of these scales, Originality, Estheticism and Thinking Introversion, the studious girls scored significantly higher than the social leader girls. These results seem to indicate that the differences between the profiles are due more to the girls than to the boys; i.e., that, on these variables, girls are more different from each other than are boys.

To illustrate more clearly the differences among the profile groups, their scores (along with the scores of the average students) are plotted on Graph 1. The scores,

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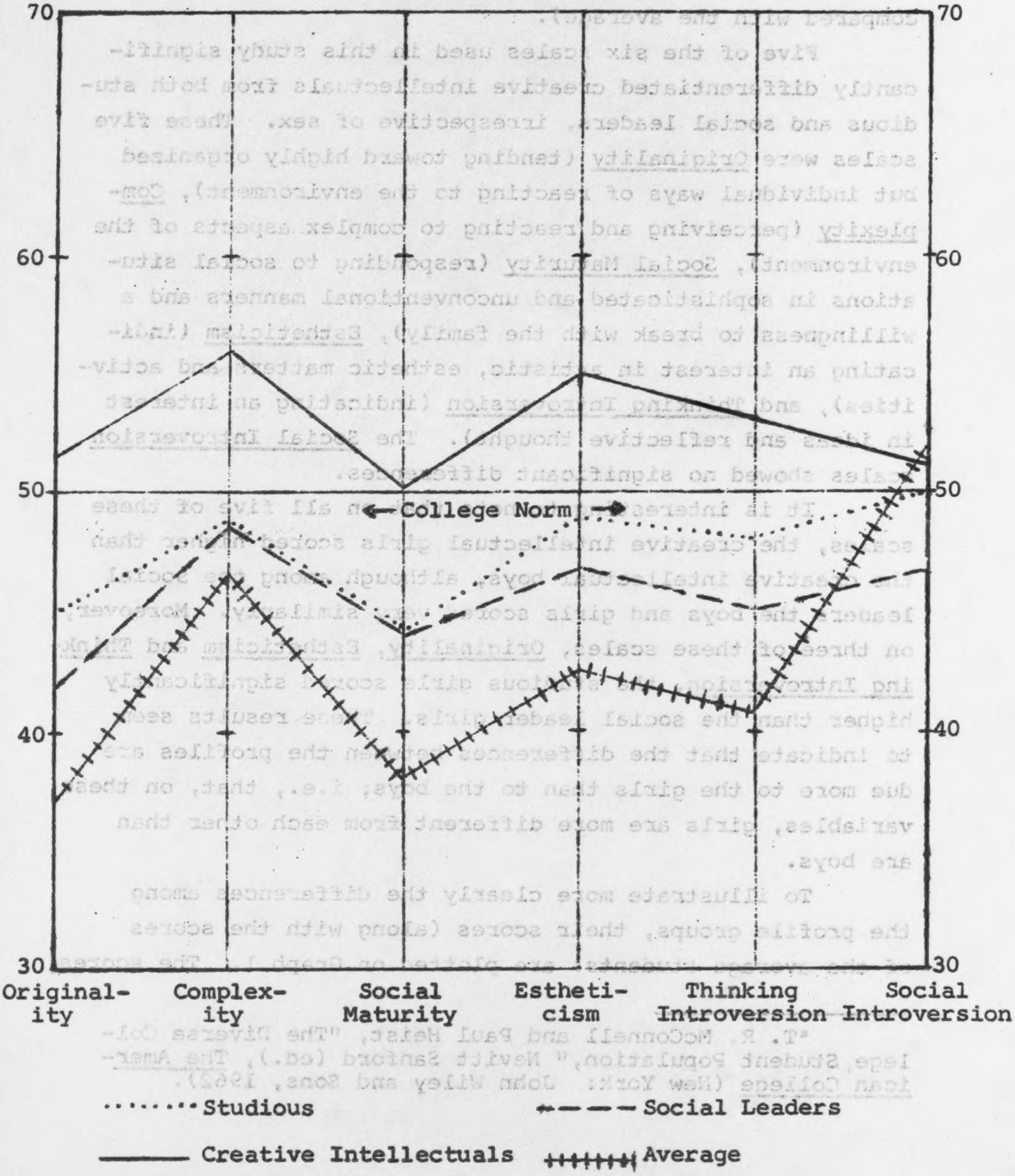
*T. R. McConnell and Paul Heist, "The Diverse College Student Population," Nevitt Sanford (ed.), The American College (New York: John Wiley and Sons, 1962).

GRAPH 1

COMPARISON OF SUPERIOR STUDENT PROFILE GROUPS AND AVERAGE STUDENTS ON THE OMNIBUS PERSONALITY INVENTORY



as in Table 4, are reported in terms of the standard scores* established for college students. It is apparent that the creative intellectuals compare favorably with college students and are quite different from the other profile groups. As had been hypothesized, the social leaders scored the lowest of the three types.

The final hypothesis was supported by the data analyzed. The creative intellectuals received significantly higher scores on the Originality, Complexity, Social Maturity, Estheticism and Thinking Introversion scales than did the social leaders and the studious, indicating a greater maturity and a greater interest in intellectual matters.

Summary: The four standardized tests used in this research clearly discriminated the creative intellectuals from other able students. This group was more skillful in problem solving (as shown on the American Council of Education's Critical Thinking Test). The scores on the Rokeach Dogmatism and Rigidity Scales showed them to be more open to change--either a set of beliefs or a single belief or habit. Although there were differences between the boys and girls on the Allport-Vernon-Lindzey Study of Values, within each sex the profile trends were similar: the creative intellectuals scored significantly higher than the other profiles on Theoretical and Aesthetic scales, and significantly lower on Political and Economic scales. On the Omnibus Personality Inventory, the creative intellectuals received significantly higher scores on the Originality, Complexity, Social Maturity, Estheticism and Thinking Introversion scales than the other groups. Their scores were generally higher than the other profiles and closely comparable to creative adults' scores.

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*Standard scores indicate a mean of 50, with a standard deviation of 10. Scores of 60 or more place the individual higher than about 84 per cent of the general population.

TABLE 4
MEAN[a] SCORES FOR SUPERIOR STUDENTS BY PROFILE FOR THE OMNIBUS PERSONALITY INVENTORY

		Superior Students					
	(Average Students)	Studious		Creative Intellectual		Social Leader	
Boys							
Originality	(37)	43	•	49	•	42	
Complexity	(46)	48	•	55	•	50	
Social Maturity	(39)	44	•	49	•	44	
Estheticism	(42)	45	•	51	•	46	
Thinking Introversion	(40)	46	•	51	•	44	
Social Introversion	(55)	53		53		50	
Girls							
Originality	(38)	46	•	53	•	42	•[b]
Complexity	(47)	49	•	58	•	49	
Social Maturity	(37)	44	•	52	•	43	
Estheticism	(45)	51	•	58	•	48	•[b]
Thinking Introversion	(41)	50	•	56	•	45	•[b]
Social Introversion	(50)	47		47		45	
Total							
Originality	(37)	45	•	51	•	42	•[b]
Complexity	(47)	49	•	56	•	49	
Social Maturity	(38)	44	•	50	•	44	
Estheticism	(43)	49	•	55	•	47	•[b]
Thinking Introversion	(41)	48	•	53	•	45	•[b]
Social Introversion	(52)	50		51		47	

[a] Means are in terms of standard scores for college students.

•Indicates a significant difference of .05 probability level between the two adjacent means utilizing a one-tailed *t*.

•[b] Refers to a comparison of Social Leader and Studious.

B. Student Interest Survey III (SIS III)

The Student Interest Survey III was developed to serve two major purposes: to secure background information about the students and to generate hypotheses for future study of able adolescents. This section is reported in three parts: (1) family background, (2) present style of life and (3) future style of life. The last two parts provide information about attitudes, interests and values and it is from this, particularly, that we plan to draw conclusions as to a desirable educational program. All material was analyzed by profile.

1. Family Background

This section deals specifically with the education of the parents and the expectations that they hold for their children in school. The per cent of parents receiving advanced training beyond the high school level was significantly higher for creative intellectuals than for the social leaders, while the same percentage of fathers of creative intellectuals and studious received advance training. The mothers of the studious were apt to have less education than the mothers of the creative intellectuals although the difference was not significant (Table 5).* The expectations for high marks that parents held for their children also provided significant differences (Table 6). The parents of both the studious and the creative intellectuals had high expectations (i.e., grades of "A" and "B") as did the parents of the social leader girls. The expectations for the social leader boys, however, were significantly lower than for either the creative intellectuals or the studious.

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*All reported differences in the SIS section of the results were at .05 significance level unless otherwise indicated. Because of the large number of tables we have grouped them for relevance and convenience in reporting. Only those results which showed significant trends are reported due to space limitations and due to the exploratory nature of the study.

TABLE 5

PARENTS' EDUCATION

	Studious	Creative Intellectual	Social Leader
Per cent receiving advanced training beyond high school:			
Fathers			
Boys	50	57	39
Girls	56	56	37 *[a]
Total	53	56 *	38 *[a]
Mothers			
Boys	42	50	34
Girls	48	62 *	31
Total	45	56 *	33

*$p < .05$, comparing adjacent profiles by chi square.

[a] Refers to a comparison of Social Leader and Studious.

TABLE 6

PARENTS' EXPECTATIONS FOR SCHOOL MARKS

	Studious	Creative Intellectual	Social Leader
Per cent whose parents expect "very good grades (A's and B's)":[a]			
Boys	94	91 *	68 *[b]
Girls	95	96	91 *[b]
Total	95	93 *	79 *[b]

*$p < .05$, comparing adjacent profiles by chi square.

[a] Other choices were "fairly good grades" and "not care."

[b] Refers to a comparison of Social Leader and Studious.

2. Present Style of Life

Activities and Modes of Spending Leisure Time: Relatively strong cultural and aesthetic interests were revealed in the leisure (Table 7) and extracurricular (Table 8) activities reported by the creative intellectuals. They liked to read, enjoyed music to a far greater extent than did social leaders and appreciated art more than either the social leaders or the studious. They were much less interested in conventional adolescent activities--"being with friends and riding around," dating and sports.

The studious tended to reveal certain aesthetic and intellectual interests similar to those of creative intellectuals, but these were usually less pronounced. They showed relatively more social inclinations (interest in "being with friends" and dating) than did the creative intellectuals, but were less interested in socializing and in sports than were the social leaders.

A further reflection of the interest in ideas exhibited by the creative intellectuals was apparent in student accounts of how they spent their out-of-class time during the school year (Table 9). The creative intellectuals indicated that they spent more time in discussions and in learning new ideas than did either the studious or the social leaders. This was particularly true of the creative intellectual girls. Although all groups indicated much time spent studying, the creative reported considerably less of their time spent in this manner than did the studious (Table 11). The social leaders preferred to be with the right crowd (with an emphasis on being really "in") much more than did either the creative intellectuals or the studious. It is interesting to note that none of the social leader girls spent time discussing or learning new ideas, while a majority of them went with the "right" crowd. The studious seemed most concerned about teachers and administrative approbation, with a significantly higher percentage than the other groups indicating that they spent most of their time out of class doing assigned school work.

If given a choice of the use of an extra hour at school, the profiles again show significant differences (Table 10). The creative intellectuals preferred to spend this time in advancced seminars, discussions and learning on their own. As expected, the social leaders chose to participate in activities and athletics while the studious indicated a preference for using the time to do assigned school work.

Reading Habits and Interests: The subject of reading distinguished between the three profiles more effectively than any other activity. The creative intellectuals did a great deal more reading than did the other two groups (Table 12), although they did not study as much as the studious. There was little difference in the amount of outside reading the studious and social leaders engaged in. As might be expected, the level of student interest in reading followed the same general pattern with the creative intellectuals considering themselves to be "avid" readers more often than the studious or the social leaders (Table 13).

When asked to designate their primary reason for reading, all groups (when boys and girls were combined) gave the largest vote to reading for the sake of "learning new things" (Table 14). However, the creative intellectuals also read for an "insight into the meaning of life and the universe"--choosing this significantly more often than the studious and social leaders, while the social leaders read to become "well-rounded and interesting" more often than the other able adolescents in the sample.

Almost half of the creative intellectual girls read to obtain an understanding of life and the universe, while only a few studious or social leader girls reported this as their primary reason for reading. Although there were no significant differences among the boys, the percentages revealed the same trend as the total.

The types of literature these students preferred gave yet another indication of the distinctive values and interests of the three groups (Table 15). Creative intellectuals were distinguished from the social leaders by their greater interest in religious novels and serious reading, science fiction, informational books (such as the encyclopedia), off-beat verse (girls only), classical works, more thoughtful publications (such as the New Yorker), and anything and everything (including the telephone book). They differed from the social leaders primarily by expressing a much greater interest in reading. This was true when their degree of interest in the same literary areas was compared (with the exception of science fiction and off-beat verse), and it was true also in terms of kind of reading preferred. Creative intellectuals read serious material such as religious novels significantly more than the social leaders and read fewer sports magazines, movie magazines and true confession-type material.

Creative intellectual girls read more science fiction than studious girls, more religious novels and serious works than social leader girls, and more informational books, off-beat verse and classics than either group. This creative group was the least interested in movie magazines and the Nancy Drew type books.

TABLE 7

LEISURE TIME ACTIVITIES

(Percentages)	Studious		Creative Intellectual		Social Leader	
Reading[b]						
Boys	7		16	*	3	
Girls	21		27	*	6	
Total	15		22	*	4	*[a]
Art						
Boys	0		2		0	
Girls	1	*	7		0	
Total	0	*	5		0	
Being with friends, riding around						
Boys	12		9		24	
Girls	19		11	*	34	
Total	16		10	*	29	*[a]
Dating						
Boys	13		10		29	
Girls	24		18		31	
Total	19		17	*	30	

*$p < .05$, comparing adjacent profiles by chi square.

[a] Refers to a comparison of Social Leader and Studious.

[b] Thirteen choices were originally offered; those not reported were not significant. Each student chose the one enjoyed most.

TABLE 8

EXTRACURRICULAR ACTIVITIES

(Percentages)	Studious		Creative Intellectual		Social Leader	
Sports[b]						
Boys	39		37	*	63	*[a]
Girls	28	*	13	*	46	*[a]
Total	33		25	*	55	*[a]
Music						
Boys	13		21		8	
Girls	17		29		11	
Total	15		25	*	10	

*$p < .05$, comparing adjacent profiles by chi square.

[a] Refers to a comparison of Social Leader and Studious.

[b] Seven choices were originally offered; those not reported were not significant. Each student chose the one enjoyed most.

TABLE 9

SPENDING TIME OUTSIDE CLASS

(Percentages)[a]	Studious		Creative Intellectual		Social Leader	
Boys						
Being with the right crowd	29		22	*	55	
Discussing or learning new ideas	16		22		8	
Doing homework and studying	51		46		32	
Girls						
Being with the right crowd	17		19	*	70	*[b]
Discussing or learning new ideas	7	*	30	*	0	*[b]
Doing homework and studying	76	*	49		30	*[b]
Total						
Being with the right crowd	23		20	*	62	*[b]
Discussing or learning new ideas	11	*	26	*	4	
Doing homework and studying	65	*	48		31	*[b]

*$p < .05$, comparing adjacent profiles by chi square.

[a] The percentages do not always add up to 100 because another choice, "working on cars or rodding around," was offered.

[b] Refers to a comparison of Social Leader and Studious.

TABLE 10

SPENDING AN EXTRA HOUR AT SCHOOL

(Percentages)	Studious		Creative Intellectual		Social Leader	
Boys						
Advanced seminars, discussing ideas, being on my own	23	*	39		19	
Activities and athletics	25		22		38	
Work on homework	52		39		43	
Girls						
Seminars, discussions	37		47	*	11	*[a]
Activities, athletics	19		22		40	*[a]
Homework	44		31		49	
Total						
Seminars, discussions	31	*	43	*	15	*[a]
Activities, athletics	31		22	*	39	*[a]
Homework	48	*	35		46	

*$p < .05$, comparing adjacent profiles by chi square.

[a] Refers to a comparison of Social Leader and Studious.

TABLE 11

TIME SPENT STUDYING

	Studious		Creative Intellectual		Social Leader	
Per cent studying six hours or more per week:						
Boys	88	*	71		76	
Girls	90		84		69	*[a]
Total	89	*	78		73	*[a]

*$p < .05$, comparing adjacent profiles by chi square.

[a] Refers to a comparison of Social Leader and Studious.

TABLE 12

TIME SPENT IN GENERAL READING

	Studious		Creative Intellectual		Social Leader
Per cent reading six hours or more per week:					
Boys	34	*	67	*	37
Girls	43	*	60	*	29
Total	39	*	63	*	33

*p $<$ .05, comparing adjacent profiles by chi square.

TABLE 13

INTEREST IN READING

	Studious		Creative Intellectual		Social Leader
Per cent describing themselves as "avid" readers[a]					
Boys	17	*	44	*	13
Girls	41	*	53	*	26
Total	30	*	51	*	19

*p $<$ .05, comparing adjacent profiles by chi square.

[a] Other choices offered were "average" and "not interested."

TABLE 14

REASONS FOR READING

(Percentages)[a]	Studious		Creative Intellectual		Social Leader
Boys					
Enjoy learning new things	47		52		47
Get better grades	11		2		8
Make me well-rounded and interesting	22		19		28
Give me insight into the meaning of life and the universe	13		24		11
Girls					
Learning new things	43		27		37
Better grades	5		2		0
Well rounded, interesting	36	*	20	*	51
Meaning of life, universe	15	*	49	*	9
Total					
Learning new things	45		39		42
Better grades	8		2		4
Well rounded, interesting	30		20	*	39
Meaning of life, universe	14	*	37	*	10

*$p < .05$, comparing adjacent profiles by chi square.

[a] The percentages do not add up to 100 because another choice, "I don't read if I can help it," was offered.

TABLE 15

READING INTERESTS

(Percentages)[a]	Studious		Creative Intellectual		Social Leader	
Science Fiction						
Boys	30		38		26	
Girls	7	*	18		6	
Total	17	*	27		16	
Information, the Encyclopedia						
Boys	49		49		45	
Girls	28	*	58	*	9	*[b]
Total	37	*	53	*	27	
Russian translations, French originals						
Boys	1		2		0	
Girls	4		11	*	0	
Total	3		7		0	
Ezra Pound, off-beat verse						
Boys	1		2		5	
Girls	2	*	18	*	0	
Total	2	*	10		3	
Anything, even the telephone book						
Boys	7	*	16		16	
Girls	16	*	33	*	9	
Total	12	*	25	*	12	
Classics, plays, the New Yorker						
Boys	12		23	*	5	
Girls	30	*	58	*	20	
Total	22	*	41	*	12	
Religious novels, serious reading						
Boys	12		21	*	5	
Girls	41		51	*	17	*[b]
Total	28		36	*	11	*[b]

*$p < .05$, comparing adjacent profiles by chi square.

[a] The percentage refers to those answering "mostly like me" or "just like me" in relation to the type of reading described.

[b] Refers to a comparison of Social Leader and Studious.

TABLE 15 (continued)

(Percentages)[a]	Studious		Creative Intellectual		Social Leader	
Movie magazines, True Confession						
Boys	0		0		0	
Girls	7		4	*	26	*[b]
Total	4		2	*	12	*[b]
Sports						
Boys	47		28	*	61	
Girls	7		4		14	
Total	24		16	*	38	
Nancy Drew, typical teen books						
Boys	1		2		5	
Girls	38	*	20	*	51	
Total	22	*	11	*	27	

*$p < .05$, comparing adjacent profiles by chi square.

[a] The percentage refers to those answering "mostly like me" or "just like me" in relation to the type of reading described.

[b] Refers to a comparison of Social Leader and Studious.

Attitudes Toward Self in Relation to Others: Although the creative intellectuals received lower marks in school than did the studious, they ranked themselves "above average" in ability as often as did the high-achieving studious (Table 16). On the other hand, the social leaders, whose marks were also relatively low for an academically talented group, were less apt to describe themselves as "above average" than the other two groups. As in their reading interests and leisure patterns the social leaders seemed to identify more often with the average population, they were less interested in being "one of the best" in class when compared with the other groups (Table 17).

When students were asked to choose the class position in which they felt most comfortable (one of the best, average or below average), the studious were most anxious to be "one of the best," while the social leaders placed the least emphasis on a high position. The creative intellectuals ranked between the other two profiles.

Attitudes toward self in relation to others were examined further as the results of how each group wants to be remembered after graduation were reviewed (Table 18). Both the creative intellectuals and the studious showed a predominant interest in being remembered for having made an intellectual or an academic impact. Both groups chose primarily to be remembered as "brilliant, but not a grind." Almost three times as many creative intellectuals chose this as did social leaders. The social leaders chose the more usual teenage status symbol--the boys choosing particularly the "star athlete" and the girls choosing "most popular." The differences among the girls in the three groups was most striking with respect to the desire to be remembered as "most popular." A majority of the social leader girls chose this while less than a fourth of the studious and only a few of the creative intellectual girls considered this to be important. In fact, fewer girls who were creative intellectuals chose "popularity" than their male counterparts. The studious, although occasionally similar to the social leaders in their values and interests, were much more inclined to want to be remembered intellectually than the social leaders. When compared to social leaders, many more studious chose "brilliant, but not a grind." The studious, however, selected this alternative somewhat less often than the creative intellectuals. The studious, although not greatly concerned with popularity, made the choice of "most popular" significantly more often than did the creative intellectuals.

Analyzed according to sex, both girls and boys exhibited differences by types. Social leader boys chose to be remembered as the "star athlete" and "most popular" more often and as "brilliant, but not a grind" less often than creative intellectual and studious boys. Their feminine counterparts were not at all interested in athletic fame, but followed the same pattern with respect to being "most popular" and "brilliant, but not a grind."

The last part of this section deals with the classroom situation (Table 19). When asked if they preferred to be grouped by ability or left in a heterogeneous classroom, the creative intellectuals reported a significant preference for grouping when compared to the social leaders. The creative intellectual girls chose this somewhat less than the boys, but significantly more than the social leader girls. Again we may be noting a desire of the social leaders to align themselves with average groups.

TABLE 16

ABILITY SELF-RATING

	Studious	Creative Intellectual	Social Leader
Per cent describing their ability as "above average":			
Boys	70	74 *	45 *[a]
Girls	78	80 *	51 *[a]
Total	75	77 *	48 *[a]

*$p < .05$, comparing adjacent profiles by chi square.

[a] Refers to a comparison of Social Leader and Studious.

TABLE 17

MOST COMFORTABLE POSITION IN CLASS

	Studious	Creative Intellectual	Social Leader
Per cent indicating "one of the best":			
Boys	82	67	50 *
Girls	78	73	71
Total	80	70	60 *

*$p < .05$, comparing Social Leader and Studious by chi square.

TABLE 18

HOW THEY WANT TO BE REMEMBERED

(Percentages)	Studious		Creative Intellectual		Social Leader	
Boys						
Student with highest grades	12		16		5	
Star athlete	19		9	*	42	*[a]
Most popular	18		12	*	24	*[a]
Brilliant, but not a grind	51		63	*	29	*[a]
Girls						
Student with highest grades	16		16		6	
Star athlete	1		0		0	
Most popular	23	*	9	*	71	*[a]
Brilliant, but not a grind	61		75	*	23	*[a]
Total						
Student with highest grades	14		16		5	
Star athlete	9		5	*	22	*[a]
Most popular	21	*	10	*	47	*[a]
Brilliant, but not a grind	56	*	69	*	26	*[a]

*$p < .05$, comparing adjacent profiles by chi square.

[a] Refers to a comparison of Studious and Social Leader.

TABLE 19

PREFERENCE FOR ABILITY GROUPING

	Studious		Creative Intellectual		Social Leader
Per cent preferring ability grouping (by bright, average or slow):					
Boys	71		84		66
Girls	71		78	*	54
Total	71		81	*	60

*$p < .05$, comparing adjacent profiles by chi square.

Attitudes Toward School: As was shown earlier, the creative intellectuals and the studious were more interested in schoolwork and intellectual endeavors than were the social leaders (Table 20). The fact that the majority of gifted students are interested in learning supports other findings in this study. In an effort to find out what type of school and teacher would generate the greatest interest in learning, the ideal school and teacher scales were developed. When the three groups were asked to indicate the kind of school and teacher that they preferred, it became apparent that all groups were more interested in the teacher or school situation that was comparable to the self-description they had chosen. The students were asked to pick their ideal school (Table 21) from a list of three schools which were described as follows:

(A) A "good time" school where activities are stressed and academic pressures are light.

(B) An academically oriented school with high standards, strict teachers, a tight organization and little freedom for the student.

(C) A school which encourages creative performance by employing informal intellectual groups and seminars and in which students have much freedom and are enthusiastic about learning.

The three groups were asked to choose the ideal teacher (Table 22) from a list which offered the following three choices:

(A) A friendly, "easy going" teacher who finds school activities attractive and does not expect much academic output.

(B) A strict teacher who stresses facts, gives regular assignments and examinations, and appreciates students who meet his standards.

(C) A creative, inspiring teacher with broad interests who encourages originality and independence in his students.

The creative intellectuals chose school and teacher type C (the creative choices) significantly more often than did the studious and the social leaders. In other words, a majority of their choices was for the more positively supportive situation and teacher. Their second choice was the school and teacher type B (strict and fact-oriented) and the type A teacher and school (fun and activities) was chosen least often.

Over half of the studious preferred the strict school and teacher (type B) with their studious orientation. Their preference for type B was significantly greater than that shown by the creative intellectuals. The studious ranked the more creative school and teacher (type C) second, and the school and teacher that emphasized fun and activities last (type A), although they were somewhat more tolerant of this "non-school" schooling than the creative intellectuals.

The social leaders, consistent with their profile, chose the type A teacher more often than did the creative intellectuals and the studious; however, they capitulated to convention by choosing the strict teacher (B) as more desirable than the easy-going one (A), and the social leader girls also saw school B as most desirable. This was in contrast to the social leader boys who were much more interested in the low pressure school. The creative, learning-oriented school and teacher (type C) were seen as the least desirable by social leaders.

The students also defined their preferences for kinds of teachers and schools by the choice of the qualities--chosen from a prepared list--which they liked in a teacher and felt to be ideal in a school. The same trends noted in Tables 21 and 22 were apparent in Tables 23 and 24, with students generally choosing the qualities which were consonant with their self-descriptions.

In contrast to the studious, creative intellectuals were more apt to prefer a school with free scheduling.

When creative intellectuals were compared to the social leaders, they were seen to choose more frequently a school with "the best library in town" and well-versed teachers. Furthermore, they indicated a preference for philosophical discussion groups and for teachers who encouraged these types of activity more often than did either the social leaders or studious. A majority of the creative intellectuals wanted a teacher who encouraged creative research; and chose this characteristic significantly more often than did the studious or the social leaders. Another preference related to intellectual orientation which showed the creative intellectuals to be significantly different from the social leaders was a desire for teachers who know the principles and broader implications of their subject. In this respect the studious group was much like the creative intellectuals.

The greatest differences existed between the creative intellectuals and the social leaders who showed strong preference for a teacher who was attractive, well-dressed and fun to have around; one with school spirit but not too concerned about learning. Wanting a teacher who would keep homework easy rather than one who was bookish and concerned with philosophy, the principles of the subject and research also distinguished the social leaders from the creative intellectuals. Qualities that the social leaders preferred in a school (when contrasted with the creative intellectuals) were also very different. A winning team was of much greater importance to the social leaders, and more of this group wanted a parking lot than did the creative intellectuals.

The studious set themselves apart from both creative intellectuals and social leaders by their interest in having a planned course of study and an honor roll. However, in other ways, the studious were much like the creative intellectuals, preferring teachers who encourage creative research and philosophical discussions. Over two-thirds of this group wanted a teacher who knew the principles of the subject. They were relatively uninterested (and significantly different from the social leaders in these patterns of preference) in teachers who told jokes and gave easy homework and only one per cent thought it desirable that a teacher not like books.

TABLE 20

INTEREST IN SCHOOLWORK

	Studious	Creative Intellectual		Social Leader	
Per cent who are interested:					
Boys	87	86		68	*[a]
Girls	92	87	*	63	*[a]
Total	90	86	*	66	*[a]

$^{*}p < .05$, comparing adjacent profiles by chi square.

[a] Refers to a comparison of Social Leader and Studious.

TABLE 21

CHOICES FOR IDEAL SCHOOL

(Percentages)	Studious		Creative Intellectual		Social Leader	
Boys						
School A[a]	23		14	*	60	*[b]
School B	52	*	31		22	*[b]
School C	25	*	55	*	19	
Girls						
School A	17		13		33	
School B	52	*	20	*	46	
School C	31	*	67	*	21	
Total						
School A	20		14	*	47	*[b]
School B	52	*	25		33	*[b]
School C	29	*	61	*	20	

[a] At High School A everybody has a good time. Sports are the thing. Everyone dresses "neat," belongs to clubs, and goes to games and dances. Teachers are real pals and know how to joke and kid around. Classes aren't all play but there's not a lot of homework. Both teachers and principals agree that there should be time for outside activities. They realize how important adjustment and well-rounded development are.

At High School B teachers are quite strict, though friendly. Standards are high and students work for good grades. The classes are well-organized and the assignments are clear-cut. There's a definite plan of courses worked out so you know what you'll be studying. Test grades, etc., let you know how you're doing compared to the rest of the class, and good work is rewarded.

At High School C the key note is learning almost anything! It's work, but there's a chance to choose your own projects and to go ahead as far as you can. There're lots of abstract discussions in class and a kind of freedom in what they're doing. Debate, science clubs, literary groups, or philosophical gabfests take up what time is left after school work.

[b] Refers to a comparison of Social Leader and Studious.

*$p < .05$, comparing adjacent profiles by chi square.

TABLE 22

CHOICES FOR IDEAL TEACHER

(Percentages)	Studious		Creative Intellectual		Social Leader	
Boys						
Teacher A[a]	11		7	*	24	
Teacher B	60	*	39		41	*[b]
Teacher C	29	*	54		35	
Girls						
Teacher A	10		9	*	34	*[b]
Teacher B	46		31		51	
Teacher C	44		60	*	14	*[b]
Total						
Teacher A	11		8	*	29	*[b]
Teacher B	52	*	35		46	
Teacher C	37	*	57	*	25	*[b]

[a] Teacher A is the friendly type. He likes to joke with the kids and he doesn't pile on the homework like some teachers do. Most of the time we just have a good time in class. He's really interested in what goes on around school--cheers for the team at games and things like that.

Teacher B puts the emphasis on learning the facts, and really knows them himself. There is a feeling of organization in his class. He assigns work in the books and if you keep up you are well prepared for exams. He tries to help students who want to improve, and he appreciates students who meet his high standards.

Teacher C doesn't do much teaching in the usual way although he has insight into many subjects. He wants students to have their own ideas and to learn to discuss problems. He inspires you to work and think on your own and encourages original projects. He's hard because you work hard, but with him it's really learning.

[b] Refers to a comparison of Social Leader and Studious.

*$p < .05$, comparing adjacent profiles by chi square.

TABLE 23

QUALITIES OF AN IDEAL SCHOOL

(Percentages)	Studious		Creative Intellectual		Social Leader	
Boys						
Philosophy discussion groups[a]	12		23		8	
Best library in town	20		26		11	
Teachers who know subject well	73		77		66	
Free scheduling for individual interests	38	*	56		53	
Planned course of study, honor roll	45		30		26	
A winning team	48		44		66	
A parking lot for the kids	3		5	*	23	*[b]
No creeps who know it all	12		7	*	32	*[b]
Girls						
Philosophical discussions	14	*	38	*	3	*[b]
Best library	20		31		11	
Teachers who know subject well	84		87	*	63	*[b]
Free scheduling	47		58		46	
Planned study, honor roll	49	*	24		29	*[b]
Winning team	36		29		66	*[b]
Parking lot	1		2		17	*[b]
No creeps	5		2		11	*[b]
Total						
Philosophical discussions	13	*	31	*	5	
Best library	20		28	*	11	
Teachers who know subject well	80		82	*	64	*[b]
Free scheduling	43	*	57		49	
Planned study, honor roll	47	*	27		27	*[b]
Winning team	41		36	*	66	*[b]
Parking lot	2		3	*	20	*[b]
No creeps	8		5	*	22	*[b]

*$p < .05$, comparing adjacent profiles by chi square.

[a] Fourteen choices were originally offered, with the student being allowed to choose four. The six not reported were not significant.

[b] Refers to a comparison of Social Leader and Studious.

TABLE 24

QUALITIES LIKED IN A TEACHER

(Percentages)	Studious		Creative Intellectual		Social Leader	
Boys						
Has school spirit, goes to games[a]	34		30		44	
Jokes, a "real smoothie"	21		26		39	*[b]
Encourages creative research	4	*	75	*	31	
Gives easy homework	22		16	*	44	*[b]
Encourages philosophical discussions	40		42		39	
Is attractive, well dressed	19		19	*	42	*[b]
Knows principles, implications of a subject	65		58	*	34	*[b]
Doesn't take to books	3		2		13	*[b]
Girls						
Has school spirit, goes to games	33	*	16	*	43	
Jokes, a "real smoothie"	14		20		23	
Encourages creative research	51		64	*	17	*[b]
Gives easy homework	12		13	*	37	*[b]
Encourages philosophical discussions	53	*	73	*	32	*[b]
Is attractive, well dressed	34		24	*	52	
Knows principles, implications of a subject	70		69	*	43	*[b]
Doesn't take to books	0		0		8	*[b]
Total						
Has school spirit, goes to games	34		23	*	44	
Jokes, a "real smoothie"	17		23		31	*[b]
Encourages creative research	48	*	69	*	24	*[b]
Gives easy homework	17		15	*	41	*[b]
Encourages philosophical discussions	48		58	*	36	
Is attractive, well dressed	27		22	*	46	*[b]
Knows principles, implications of a subject	68		64	*	38	*[b]
Doesn't take to books	1		1	*	11	*[b]

*$p < .05$, comparing adjacent profiles by chi square.

[a] Sixteen choices were originally offered, with the student being allowed to choose four. The eight not reported were not significant.

[b] Refers to a comparison of Social Leader and Studious.

These gifted students reflected their own intellectual inclinations as well as their frustrations when they reported on the qualities of the counselors* they had had (Table 25) and the types they considered ideal (Table 26). The creative intellectuals seemed to be less satisfied with counselors; i.e., they reported counselors as generally having qualities which fell short of ideal more often than the other two groups. For example, they saw counselors as sticklers for following the rules more often than the other groups. This information should be evaluated in the light of Table 35 which indicates that the creative intellectuals showed strong interests in being creative and original, intellectual, cultured and individualistic and living their own lives and making their own rules. It should also be noted that very few of the creative intellectuals considered "being a stickler for following the rules" as an ideal quality for counselors. A quality seen as characteristic of counselors by less than half of the creative intellectuals (that counselors helped students clarify their feelings) was chosen significantly more times by the studious students than social leaders. Many creative intellectuals felt that counselors were not accepting of the breadth of their interests and even a larger number saw counselors as considering their "desire to contribute to the world" as inappropriate than did the social leaders and the studious.

The majority of students felt the ideal counselor should be interested and helpful in vocational areas, but the creative intellectuals, particularly the girls, were less concerned with this than the other groups. Almost all students considered a counselor to be closer to the ideal if he treated them as individuals. The creative intellectual boys were significantly more concerned with this quality than the boys of the other two groups.

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*The senior high counselors at the time the survey was done were heavily involved in scheduling and helping students prepare for college, although they occasionally worked with students who had personality and adjustment problems.

TABLE 25

QUALITIES OF MOST COUNSELORS

(Percentages)	Studious		Creative Intellectual		Social Leader	
Stickler for following rules[a]						
Boys	37		49	*	18	*[b]
Girls	38		47		34	
Total	37		48	*	26	
Irritated by my breadth of ideas						
Boys	6	*	16		13	
Girls	7	*	17		13	*[b]
Total	6	*	16		13	*[b]
Helps clarify my feelings						
Boys	58		49		58	
Girls	65	*	44		66	
Total	62	*	47		62	
Feels my desire to contribute to the world inappropriate						
Boys	10	*	26	*	8	
Girls	8		16		14	
Total	9	*	21		11	

*$p < .05$, comparing adjacent profiles by chi square.

[a] Thirteen choices were originally offered; those not reported were not significant.

[b] Refers to a comparison of Social Leader and Studious.

TABLE 26

QUALITIES OF IDEAL COUNSELOR

(Percentages)	Studious		Creative Intellectual		Social Leader	
Stickler for following rules[a]						
Boys	13		5		11	
Girls	13	*	2		3	*[b]
Total	13	*	3		7	
Interested and helpful in vocational areas						
Boys	75		70		76	
Girls	86	*	64		83	
Total	81	*	67		79	
Treats me as an individual with rights						
Boys	90	*	100	*	82	
Girls	91		93		94	
Total	91		97		88	

*$p < .05$, comparing adjacent profiles by chi square.

[a] Thirteen choices were originally offered; those not reported were not significant.

[b] Refers to a comparison of Social Leader and Studious.

3. Future Style of Life

Educational Aspects: The first aspect of this section deals with the students' hopes and expectations educationally. Both the creative intellectuals and the studious seemed less interested in marriage before graduation from college than the social leaders (Table 27). In terms of educational interests, more of these two groups hoped and expected to graduate from college before marriage. As might be expected, the boys of all groups generally did not expect to marry as early as the girls. The early interest in dating and being popular (Tables 8 and 9) provides a rationale for the expectations of early marriage of the social leaders. Although the social leaders did reveal a tendency to hope to marry early, fewer of the social leader boys planned this than their feminine counterparts.

More students of every profile hoped to attend graduate school than expected to be able to; however, there were significant differences in hopes among the profiles (Table 28). Two-thirds of the creative intellectuals hoped to do graduate work, while less than half of the studious and slightly over one-fourth of the social leaders wanted advanced work. Although the creative intellectual girls were less interested in graduate school than the creative intellectual boys, these girls were more interested in advanced training than any other sub-group irrespective of sex. It is interesting to note, however, the gap between expectations and hopes.

Motivation to go on to college (Table 29) provided another significant measure of differences between the creative intellectuals, the studious and the social leaders. The creative intellectuals and the studious felt that motivation came primarily from themselves. This self-motivation was reported to a much greater extent by the creative intellectual girls than any other group. Counselors and teachers were seen by all groups as less influential in determining college attendance than any other factor.

The most important reasons for attending college provide further insight into the general orientation of the profile types (Table 30). They were primarily learning-oriented reasons for the creative intellectual and studious and for the social leader boys and primarily social for the social leader girls. The stimulation of new ideas appealed to the creative intellectual girls more than to any other group and the campus activities appealed to the social leader girls more than any other.

TABLE 27

FUTURE MARRIAGE PLANS

(Percentages	Studious	Creative Intellectual		Social Leader	
Expect to graduate from college before marriage					
Boys	53	70	*	32	*[b]
Girls	36	33		23	
Total	43	51	*	27	*[b]
Hope to graduate from college before marriage					
Boys	66	71	*	42	*[b]
Girls	47	47		34	
Total	56	59	*	38	*[b]

*$p < .05$, comparing adjacent profiles by chi square.

[a] Refers to a comparison of Social Leader and Studious.

TABLE 28

FUTURE EDUCATIONAL PLANS

(Percentages)	Studious		Creative Intellectual		Social Leader	
Expect to attend graduate school						
Boys	17	*	42	*	13	
Girls	5		16		3	
Total	11	*	29	*	8	
Hope to attend graduate school						
Boys	53	*	74	*	42	
Girls	35	*	59	*	14	*[a]
Total	43	*	67	*	29	*[a]

*$p < .05$, comparing the adjacent profiles by chi square.

[a] Refers to a comparison of Social Leader and Studious.

TABLE 29

INFLUENCES IN DECIDING TO ATTEND COLLEGE

(Percentages)[a]	Studious	Creative Intellectual	Social Leader
Boys			
Father	25	27	35
Mother	8	15	15
Counselor or teacher	7	2	3
Myself	57	51	32 *[b]
Girls			
Father	19	7	23
Mother	11	12	19
Counselor or teacher	12	10	10
Myself	49	* 68	* 39
Total			
Father	22	17	29
Mother	10	13	17
Counselor or teacher	10	6	6
Myself	53	59	* 35 *[b]

*$p < .05$, comparing adjacent profiles by chi square.

[a] The percentages do not add up to 100 because another choice, "other," was offered. Also, teacher and counselor were listed separately in the survey itself.

[b] Refers to a comparison of Social Leader and Studious.

TABLE 30

MOST IMPORTANT IN COLLEGE

(Percentages)	Studious	Creative Intellectual		Social Leader	
Boys					
Stimulation of new ideas	65	61		53	
Campus activities and social life	6	5	*	18	*[a]
Opportunity to study more	29	35		29	
Girls					
Stimulation of new ideas	67	80	*	29	*[a]
Campus activities, social life	13	9	*	51	*[a]
Opportunity to study more	20	11		20	
Total					
Stimulation of new ideas	66	70	*	41	*[a]
Campus activities, social life	10	7	*	34	*[a]
Opportunity to study more	24	23		25	

*p .05, comparing adjacent profiles by chi square.

[a] Refers to a comparison of Social Leader and Studious.

Occupational Interests: The question of occupational interest was presented to the students in a listing of general categories. Each student was to pick the occupation he or she wished personally and the one he or she would prefer for the spouse.

The great majority of the boys in all three groups chose high level occupations (managerial or professional). However, there were significant differences among the girls in terms of career choices. As many of the creative intellectual girls chose high level occupations as did boys in each of the three types studied. This was a choice that was significantly different from those choices made by either the social leader or the studious girls.

Social leader girls preferred their men to be business executives more often than did girls who were creative intellectuals or studious, and a fourth of the social leader boys chose this occupational category for themselves. All three groups of boys valued science and research as male occupations. However, only the creative intellectual girl consistently chose this as a valued occupation for a husband. The patterns of interest in the arts were somewhat similar to those in science except that there was not the general male acceptance of these areas that was apparent in science. However, over three times as many creative intellectual boys saw these areas as possible careers for themselves than did the social leader and the studious boys.

Interestingly enough, there seems to be a good balance between boys who want to be engineers and girls who would like to marry engineers among all the types. The studious (boys and girls alike) are somewhat more interested in this occupational area than the other two groups.

Creative intellectual girls were less interested in being housewives only or combining homemaking and volunteer work than were studious and social leader girls, but creative intellectual boys were generally not interested in career wives.

The creative intellectual girls saw science and research as ideal occupations for women significantly more often than did the studious or social leader girls. No social leader girls chose this category. Social leader and studious girls were primarily interested in combining volunteer work with being housewives. The social leader girls chose housewife (only) and social worker as a second choice while studious girls chose teaching. Sex differences appear again in the ranks of the social leaders. Half of the social leader boys prefer their wives to be housewives--and nothing more--but only 20 per cent of the social leader girls chose this more limited way to express themselves, while 37 per cent chose housewife plus volunteer work.

All students were asked to choose from a list of thirteen items the reasons that they considered to be the best on a "real" basis (which could be interpreted as realistic or practical) for making an occupational choice, and to choose the best reasons of an "ideal" nature for choosing occupations. Only two reasons in the "ideal" grouping and two in the "real" grouping tended to differentiate the groups, i.e., produce statistically significant results (Table 34).

Creative intellectuals as a group reported "making new discoveries and being creative" as a "real" reason for making a given occupational choice significantly more often than did social leaders. The studious expressed interests of a similar nature but somewhat more moderately. Both creative intellectuals and studious chose "being on the front lines intellectually" significantly more often than did the social leaders.

The "ideal" choices revealed a much stronger interest in high pay on the part of social leaders than of the creative intellectuals and the studious. Only the creative intellectual girls maintained strong ideal interests in "being on the front lines intellectually."

Statements of a more general nature regarding preference for future life styles and patterns of participation were also presented for appraisal by the students (Table 35). All students chose "conscientious" more than any other characteristic (the studious profile group was the highest). The desire to be "intellectual, cultured and individualistic" was chosen significantly more often by creative intellectuals (both boys and girls) than by the other types. The creative intellectuals also chose to be "creative and original" more often than did the social leaders. The studious revealed many of the same interests as the creative intellectuals. However, as we have noted, the studious coupled this with wanting to be "conscientious, persevering" (significantly more often than did the creative intellectuals) while the creative intellectuals showed significantly more interest than the studious in "living their own life, making their own rules."

Being in the "country club set" and "community leaders" proved to be strong interests for the social leaders. Creative intellectual girls, in contrast, were as apt to want to "live their own lives, make their own rules" as to desire to be "community leaders."

TABLE 31

STATUS LEVEL OF IDEAL OCCUPATION

	Studious		Creative Intellectual		Social Leader
Per cent choosing managerial and professional occupations:[a]					
Boys	87		85		84
Girls	64	*	86	*	58
Total	73	*	86	*	71

*$p < .05$, comparing adjacent profiles by chi square.

[a] Consisting of occupations rated as "1" or "2" by the Warner Index of Status Characteristics.

TABLE 32

IDEAL MAN'S OCCUPATION

(Percentages)[a]	Studious		Creative Intellectual		Social Leader	
Boys (for self)						
Engineer	41		26		26	
Creative artist, writer	6	*	19		5	
Teacher	5		0		3	
Business executive	11		14		26	*[b]
Scientist, researcher	31		33		32	
Girls (for husband)						
Engineer	38		22		26	
Creative artist, writer	7		9		3	
Teacher	9		9		0	
Business executive	27		18	*	63	*[b]
Scientist, researcher	16	*	40	*	6	

*$p < .05$, comparing adjacent profiles by chi square.

[a] The percentages do not add up to 100 because two other choices, "mechanic" and "nationally famous athlete," were offered.

[b] Refers to a comparison of Social Leader and Studious.

TABLE 33

IDEAL WOMAN'S OCCUPATION

(Percentages)[a]	Studious	Creative Intellectual	Social Leader
Boys (for wife)			
Volunteer leader and housewife	37	23	26
Teacher	12	9	5
Creative artist, writer	4	12	8
Scientist, researcher	4	9	0
Social worker	3	5	3
Housewife only	36	40	50
Girls (for self)			
Volunteer leader and housewife	34	* 16	37
Teacher	24	13	14
Creative artist	7	* 31	* 9
Scientist, researcher	9	16	* 0
Social worker	4	11	20
Housewife only	16	11	20

*$p < .05$, comparing adjacent profiles by chi square.

[a] The percentages do not add up to 100 because another choice, "secretary," was offered.

[b] Refers to a comparison of Social Leader and Studious.

TABLE 34

REASONS FOR OCCUPATIONAL CHOICE

(Percentages)[a]	Studious		Creative Intellectual		Social Leader	
REASONS FOR REAL OCCUPATIONAL CHOICE:						
Making new discoveries, being creative						
Boys	13		23		8	
Girls	13		16		6	
Total	13		19	*	7	
Being on the front lines intellectually						
Boys	8		9		0	
Girls	7		9		3	
Total	7		9	*	1	*[b]
REASONS FOR IDEAL OCCUPATIONAL CHOICE:						
High pay						
Boys	12		16		29	*[b]
Girls	4		4		17	*[b]
Total	8		10	*	23	*[b]
Being on the front lines intellectually						
Boys	8		12		5	
Girls	6	*	16		7	
Total	7		14		6	

*$p < .05$, comparing adjacent profiles by chi square.

[a] Thirteen choices were originally offered; those not reported were not significant, and thus percentages do not add up to 100.

[b] Refers to a comparison of Social Leader and Studious.

TABLE 35

DESIRED FUTURE LIFE

(Percentages)	Studious		Creative Intellectual		Social Leader	
Boys						
Community leader	30		23		29	
Conscientious, persevering	66		58		50	
Creative and original	53		56		39	
Live own life, make own rules	14		21		16	
Country club set	20		9		21	
Intellectual, cultured and individualistic	7	*	23	*	5	
Girls						
Community leader	40	*	22	*	51	
Conscientious, persevering	87	*	67		57	*[b]
Creative and original	47		49	*	23	*[b]
Live own life	7	*	20		11	
Country club set	8		11	*	46	*[b]
Intellectual	10	*	40	*	6	
Total						
Community leader	36		23	*	40	
Conscientious, persevering	78	*	62		53	*[b]
Creative and original	50		52	*	31	*[b]
Live own life	10	*	20		13	
Country club set	13		10	*	33	*[b]
Intellectual	9	*	32	*	5	

*$p < .05$, comparing adjacent profiles by chi square.

[a] Eleven choices were originally offered, with the student being allowed to choose four. The five not reported were not significant.

[b] Refers to a comparison of Social Leader and Studious.

We will not present a summary and discussion of results at this time inasmuch as there are so many separate findings. However, in Chapter V, in a rather general fashion, we have summarized the attitudes, interests and values expressed by able youth and what these imply for education.

V. SUMMARY AND IMPLICATIONS

Each human being is different from every other one and as man becomes more highly developed these differences increase. The gifted as a group are the most diverse of all young people but we have tended to describe them in general ways that mask their special motivations and ways of perceiving and acting upon the world. A major premise of the study* just reported was that there are at least three types among the gifted--the creative intellectual, the studious and the social leader--and that each expresses a different drive or motivation. The creative intellectuals show strong, self-directed interest in learning and a great willingness to deal with both the subjective data of the self and the objective data of the larger world. The studious also show a concern for ideas and a desire to learn--but mainly confine their efforts to completing teacher-directed assignments. The social leaders prefer to make their impact felt on people rather than in the realm of ideas. They often engage in or are preparing for the life of the entrepreneur.

Of these three groups, we have chosen to focus particularly upon the creative intellectual. Autonomy in learning and openness to the world are held, by many psychologists, to be related to psychological maturity and creatively productive behaviors. If this is indeed the case, the adolescent with a predisposition toward or with a decidedly marked creative intellectual style is potentially the most mature and the most intellectually productive of all young people. It is our view that this is indeed the case. We hold that he is the young person who is most apt to be self-actualizing--to become all he can be. It is a human need to use or develop potential. Healthy young people enjoy the process of self-development--growing and learning in a great variety of ways.

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*This research was a study of approximately 400 intellectually superior adolescents, the total population of Lansing Public School Senior High students that we were able to identify as above 120 IQ in the 1960-61 school year.

In addition to the need of each individual to grow toward maturity and toward the fuller expression of creative potential, society has great new needs that call for such growth. The present is said to be characterized by a rapidity of change which has been disruptive in many areas of human living and human learning and each change seems to require human adjustments which can best be made by the more intelligent and the more creative. Career or work demands are increasingly of a nature that require highly developed ability. There are ever-accelerating needs for the "developed talent" which the Rockefeller Report called for several years ago.[1] There seems to be no doubt that knowledge has become our biggest business and we as educators must take on new responsibilities to prepare youth for a future that will make intensified demands on intellectual and creative capacities.

It is our conviction that educators must take much more responsibility for and must exert far more effort in order to develop a setting which will allow these creative capacities to emerge. This emergence of talent should not be seen as just the cultivation of virtuosity but as the thoughtful consideration of the total life pattern of talented people. The study of the attitudes, interests and values of creative people has been found to be quite relevant to their creative productions by a number of psychologists who are engaged in the study of lives.* As Maslow says, each individual needs "a framework of values, a philosophy of life, a religion or a religion-surrogate to live by, to understand by, in about the same sense that he needs sunlight, calcium or love."[2]

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*Charlotte Bühler, Paul Heist, Donald MacKinnon, Abraham Maslow, Henry Murray, Robert White and others.

In the past, creative people have not been helped to grow in the ways that would enhance the total development of the individual. As a result, we cannot consider the life patterns of the creative adults studied by such groups as The Institute of Personality and Research as ideal and although we can learn from them, these patterns do not tell us all we need to know about the best ways to educate our able youth. Many of these adults encountered needless frustrations in youth and few were deliberately guided by their schools into more creative ways of living their lives. Henle has said that each of us has a great need for, as well as a great talent for living creatively but that few have developed such talents,[3] and those who have not include many people who produce works of creative merit. In a similar vein, Gardner asserts that man has always, ". . . shown a compelling need to arrive at conceptions of the universe in terms of which he could regard his own life as meaningful,"[4] but that we do little to meet this need in our education of able and potentially creative youth (or in any young people, for that matter). As Gardner says,

> Unfortunately we have virtually no tradition of helping the individual achieve such commitment [to the development of individuality, to finding universal meanings, and to employing his intelligence wisely in terms of the social good]."[5]

We see, then, that from the viewpoint of the social philosopher, Gardner, the development of intellectual or creative excellence is not an adequate educational goal. This development must not be isolated from the development of social concern. Roe, reflecting on her studies of creative scientists, made a similar observation: "The man so completely immersed in his work as to ignore social problems, however important his work may be in the long run, is less than a man and so has failed the thing most requisite upon him."[6] For the full development of the individual the need is for both ethical concern--a developed conscience, and certain creative behaviors--independence of thought and freedom of the imagination.

This means that we must be concerned about dimensions of growth other than the cognitive. There is more apt to be an imbalance between social and/or emotional and intellectual growth in the gifted adolescent than in his more average peers due to the advanced intellectual development of the gifted which may be nurtured in our better schools and the fact that there are seemingly no school programs designed to educate for self-awareness, to help students find out who or what they might become. Along with the present heavy emphasis on mathematics and science, there is a trend toward increasing specialization in subject matter by those who teach. Teachers have felt the pull in these directions, and, in our secondary schools, we are increasingly finding that they become more concerned with _what_ they are teaching than with _whom_ they are teaching. The typical secondary teacher does not have the psychological knowledge or the temporal latitude to help the student discover himself, the world and the emerging interrelationships. The typical counselor makes class schedules, helps with college placement and counsels those with learning and personal problems. Particularly for these able students who must develop social concern and for whom splits within the self should not be allowed to develop, we need a new kind of teacher--perhaps a counselor-consultant who can give the student intellectual and social guidance as well as help him develop insights of a more personal nature.

These are the broad directives for educational change that I feel we must adopt if we are to adequately educate our superior youth for excellence in a context of concern for all. At this point, I would like to review and comment upon some of the suggestions for an improved educational environment that come from psychologists who have studied creative adults (particularly "third force" psychologists) and additional suggestions that have come from the intellectually superior and creatively inclined adolescents we have just studied.

From an inspection of expressed student interest (particularly on the items of the Student Interest Survey III and on the Omnibus Personality Inventory) we frequently have noted stated desires of the creative intellectual, as well as other able adolescents, for more freedom in the school program. This means a release from the requirements expected of the group and oftentimes from the group activities themselves. In addition, these students consider opportunities for self-selection of prime importance and would prefer that counselors as well as teachers offer much more freedom than they do. In addition to opportunities for working alone, certain kinds of group activities such as philosophy seminars are much desired by the creative intellectuals. They want to engage in dialogues and what might be called depth discussions. However, if we are to seriously consider these desires we must help teachers to become skillful discussion leaders. In other words, talents in verbal interaction are important ones for the scholar and must be deliberately taught.

Beyond this, the students often express a desire to innovate and make discoveries. Again, the teacher has a role. Students must be taught strategies of learning as well as of discussion and dialogue. Although they indicate that they want to do "independent" study and research, there is little doubt but that they need guidance in such activities. Crucial to the process of self-discovery is the skill that each student must master--learning to learn.

This means that the student must be taught ways to think creatively and critically--and he must learn to solve problems and make decisions.

Beyond the need to help each student develop thinking skills in order that he can move more readily toward self-actualization, there is also a social need to teach problem solving, for, as Dewey noted four decades ago, problem solving is not only the common denominator of the scientific method (and thus vital talent for all who seek to become scholars) but also the method of political democracy.[7] Students must come to see themselves as critics and generators of knowledge.

Freedom for the student implies that each will have to take responsibility for his own education and this in itself will involve reeducation and even the development on the part of the student of a new concept of what education is. Such new learnings will have to become part of the teaching-counseling process as will the development of new strategies of learning--problem solving skills and decision-making talents.

It is our feeling that young people cannot adequately use this new freedom in education and these new learning skills and approaches unless the content to which they are exposed is changed in dramatic ways. The "curriculum revolution" of the past decade has been mainly in mathematics and science. Modern mathematics is a reality and the thinking of some of our best scientists has been introduced into the best classrooms. However, these are only beginnings.

We rarely expose students to the range and possibilities of human excellence, they do not meet in person or through biography or film the most creative of adults, and they are not given opportunities to "stand on the shoulders of giants." Excellent teachers can be used as exemplars and, in addition, many other models can be brought into the classroom through the printed word, film and tape, by use of "resource people" and by arranging for informal apprenticeship for students so that they can work with scientists, artists and scholars. All of this should lead students toward adopting a life of creative expansion as their modal style. Many more than those who indicate that they are creative intellectuals on the self-descriptions show marked talent for creative expression and they must be given guidance. We want, above all, for students to avoid--as they mature, giving answers too quickly, treating knowledge too cursorily, and choosing careers too hastily and carelessly. It is an educational imperative that we develop new programs. We have felt that the research just completed has served as an opportunity to think through these directions for a new project more carefully. We believe the emphasis should be on quality rather than rapidity of response, and that our guidance of youth should lead them to transcendance of self rather than self-confirmation. It has been noted that identity is particularly a problem with adolescents.[8] They will not become what they could become unless they develop the ability to make good choices from an array of possibilities. It is also vital that we, as educators, provide this wide array.

In arriving at guidelines for a new pattern of education, we have come to believe that the materials that students read and study, as well as the people whom they meet, will make a difference in their intellectual development. Adolescents, and especially those who are intellectually superior, are able to think abstractly and reflectively. Teaching materials should be developed with this in mind. Students are aware of the complexity of the modern world, and they know we are living in an era of accelerated change, but we have not given them a metalanguage or metaskills which will allow them to deal with the continuity of change.[9] For example, we may not be able to provide all the needed information, language and skills for dealing with the future, but we can show students how others contemplate reorganization[10] or even "invent the future."[11]

It is our belief that education for creative potential will move much nearer to reality when we have made those arrangements necessary so that students can meet, through various avenues and media, great ideas and outstanding people, including those who approach the prototype-ideal.[12] This will mean that primary sources must be tapped and that the most vibrant of current dialogues and the best examples of moral integrity and courage must be incorporated into the materials of education. The ideas and people who will be presented will form the basis of dreams and also will help students to fashion their dreams in the realistic ways we call goals.

V. SUMMARY AND IMPLICATIONS

1. Rockefeller Report, *The Pursuit of Excellence, Education and the Future of America*, a report on education (New York: Doubleday and Co., Inc., 1959).

2. Abraham H. Maslow, *Toward a Psychology of Being* (New York: D. Van Nostrand Company, Inc., 1962), p. 192.

3. Mary Henle, "The Birth and Death of Ideas," H. E. Gruber *et al.* (eds.), *Contemporary Approaches to Creative Thinking* (New York: Atherton Press, 1962), pp. 48, 57-58.

4. John W. Gardner, *Self-Renewal, The Individual and the Self-Innovating Society* (New York: Harper and Row, 1963), p. 102.

5. John W. Gardner, *Ibid*.

6. Anne Roe, *The Making of a Scientist* (New York: Dodd, Mead and Co., Apollo Editions, 1955), pp. 232-233.

7. John Dewey, *Democracy in Education* (New York: Macmillan Co., 1916).

8. Erik H. Erikson, "Youth: Fidelity and Diversity," *Daedalus*, Vol. 91, Winter, 1962, pp. 5-27.

9. Jerome Bruner, "Education as Social Invention," *The Journal of Social Issues*, Vol. 20, July, 1964, pp. 21-33.

10. Robert Theobald, *Free Men and Free Markets* (New York: Clarkson N. Potter, Inc., 1963).

11. Dennis Gabor, *Inventing the Future* (New York: Alfred A. Knopf, 1964).

12. In my recent study which involved a curriculum revision with the aim of changing attitudes toward the creative norm, we worked from the assumption that certain qualities distinguish the most mature human beings and that these qualities can be discovered and made explicit. Adult models were chosen and presented to students as type specimens. Elizabeth M. Drews, THE CREATIVE INTELLECTUAL STYLE IN GIFTED ADOLESCENTS; *Being and Becoming: A Cosmic Approach to Curriculum and Counseling*, Report II in a series of three; Final Report for the NDEA, Title VII, 7-32-0410-140, U.S. Office of Education, "The Effectiveness of Special Training with Audio Visual in Changing Aspirations of Intellectually Superior Students" (East Lansing, Michigan: Office of Research and Publications, Michigan State University, 1965).

APPENDIXES

(The rebel type was not included in the analysis due to the fact that only a very small number of the gifted chose this for a self-description.)

STUDENT INTEREST
SURVEY III

Your responses on this survey are confidential.
Answer quickly, accurately, and honestly!

1. Name ______________________ Address ______________________

2. Birth date ______________________ Present Age __________ Home Phone No. ________

3. Sex. M___F___School ______________________ Grade __________

4. Home Room Teacher ______________________ Counselor __________

5. Father: Name ______________________ Living? ________ Where Born ______________

6. How much formal education did your father have? (Check one.)

________less than 7th grade
________through grades 7 or 8
________through grades 9 or 10
________through grades 11 or 12
________some college, business, or technical training

________finished college
________attended graduate or professional school after college
________received an advanced degree
What degree?______________

7. Father's occupation: What does he do? ______________________
With what company or organization? ______________________

8. Mother: Name ______________________ Living? ________ Where Born ______________

9. How much formal education did your mother have (check one.)

________less than 7th grade
________through grades 7 or 8
________through grades 9 or 10
________through grades 11 or 12
________some college, business, or technical training

________finished college
________attended graduate or professional school after college
________received an advanced degree
What degree?______________

10. Mother's occupation (check one.)
________housewife
________works part-time (__days a week.)
________works full-time

If mother works- What does she do? ______________________

With what company or organization? ______________________

11. In your family are you (Check one.)

______ an only child
______oldest child

______the youngest child
______between the oldest and youngest

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12. Number of children in your family (including yourself)____________________

Brothers_____ Sisters______ Half-brothers_________
Half-sisters_____ Step brothers_____ Step sisters_________
Others______________________________
(specify)

13. What are your extra-curricular activities? (At school.)
(Check ( ) activities in which you participate, double check (   )
the one you enjoy the most.)

_____Sports
_____Dramatics
_____Debating
_____Music
_____Art
_____Science
_____Newspaper
_____Other ____________________
(specify)

14. How do you spend your leisure time? (Check your recreational interests, double check the one you enjoy most.)

_____Watching TV
_____Outdoor sports
_____Reading
_____Hobbies (science) list____________________
_____Being with friends, riding around, going downtown, etc.
_____Hobbies (mechanics, work on cars, etc.) list____________________
_____Attending movies, spectator sports, etc.
_____Art (lessons or participation)
_____Hobbies (collections) list____________________
_____Music (lessons or participation)
_____Dramatics (lessons or participation)
_____Clubs (specify)____________________
_____Dating, being with the opposite sex, dancing
_____Other (specify)____________________

15. The way you spend your time (REAL) may or may not be the way you would like to spend your time (IDEAL).

During the school year, outside of class

I spend a lot of my time (REAL) I would like to spend my time (IDEAL:
(Check one.) (Check one.)
_____Being with the right crowd -- being really "in". ____
_____Discussing or learning new ideas. ____
_____Doing homework and studying. ____
_____Working on cars or rodding around. ____

16. List offices you hold now or have held this school year. These can be in or out of school, including athletic or church organizations.

Office (president, secretary, etc.)	Club or organization
____________________	____________________
____________________	____________________
____________________	____________________

12/4/60

17. School studies liked MOST	School studies liked LEAST

18. If you had an extra hour at school and could choose how to use it, which would you choose? (Check one.)

_____Advanced seminars, discussing ideas, or being on my own.
_____Activities and athletics
_____Mechanics or just goofing off
_____A time to get some of my homework done

19. Is school work (classes, assignments, tests) interesting to you?
Yes____ No____

20. How much material in the curriculum (facts and ideas in your courses) do you usually know before it is presented?

_____Most _____Some______ Little _____ None (Check one.)

21. I like a teacher who: (Choose four. List in order of choice, 1, 2, 3, 4. For example: your first choice is 1, second choice is 2, etc.)

_____Goes to games and has school spirit.
_____Gives regular assignments and checks on them.
_____Jokes a lot and kids around -- a real smoothie.
_____Encourages creative research and individual projects.
_____Really appreciates mechanics and has a good ear for engines.
_____Does most of the talking and runs the class.
_____Keeps the homework easy -- we study but it's not everything.
_____Doesn't mind getting his hands dirty.
_____Encourages philosophical and ethical discussions.
_____Is always attractive and well-dressed.
_____Sticks to the book.
_____Understands when we say that books and teachers make us sick.
_____Knows the principles and broader implications of a subject.
_____Has a subtle sense of humor.
_____Believes that drill and learning the rules is good mental discipline.
_____Doesn't take to books much more than I do.

22. In comparison with your classmates, do you consider your ability to be:

_____Below average
_____Average
_____Above average

23. How much longer do you plan to go to school? (Check one in each column.)

	Expect (This is probably what will happen)	Hope (Would like to very much)
This year only		
Before graduation		
Graduate from high school		
One or more years of college or special school		
Finish 4 years of college		
Graduate work (specify) ________________		

24. How soon do you plan to marry? (Check one in each column.)

	Expect	Hope
This year		
Before graduation		
Soon after graduation		
A few years after graduation		
During college		
After college		
Other (specify) ________________		

If you plan to attend college answer questions 25 - 27. If not, go on to 28.

25. If you plan to attend college, who has influenced this decision?
(Check those that apply; double check the one most important influence.)

______Father
______Mother
______Counselor
______Teacher
______Myself
______Other (specify) ________________

26. What questions do you have regarding college? ________________

____

____

27. What questions do you have regarding scholarships? _____

_____

28. If you were absolutely free to do whatever you wanted, how would you choose to earn your living? (IDEAL)

29. What is your present vocational choice? (REAL)

30. What are your reasons for these two choices? (Check those that apply in each column, double check the one most important.)

IDEAL		**REAL**
_____	Not at all like school -- no reports to write, no grades.	_____
_____	Efficient management provides good direction and supervision..	_____
_____	Work allows much freedom and self-direction..............	_____
_____	High pay	_____
_____	Allows me to work with tools, not much reading...........	_____
_____	Executive position or chance for one.....................	_____
_____	May be able to make new discoveries, do creative work....	_____
_____	Training and work are specific...........................	_____
_____	Nice surroundings and congenial co-workers...............	_____
_____	Job expectations are for efficiency and productivity.....	_____
_____	Chance to work with the gang.............................	_____
_____	May be able to contribute significantly to mankind.......	_____
_____	Being with those who are on the front lines intellectually, those who handle new ideas or art forms, tackle crucial issues..	_____

31. If you go to college, which of these do you think will be most important to you? (Check one.)

_____ The stimulation of new ideas
_____ Campus activities and social life
_____ The opportunity to study more

32. What do you consider to be the ideal occupation for yourself and for your future husband or wife? (Check one in each column.)

Man's Occupation

_____ Nationally famous athlete
_____ Engineer
_____ Creative artist, writer, etc.
_____ Teacher
_____ Business executive
_____ Scientist, research worker
_____ Mechanic

Woman's Occupation

_____ Volunteer community leader and housewife
_____ Teacher
_____ Creative artist, writer,etc.
_____ Social worker
_____ Scientist, research worker
_____ Secretary
_____ Housewife (no job or volunteer work)

33. In my future life: (Choose 3 only. List in order of choice -- 1, 2, 3.)

_____ I want to be a leader in my community.
_____ I want to be conscientious, persevering, and dependable in my work.
_____ I want to be creative and original, perhaps discover something new.
_____ Whatever I do, I don't want to go to school.
_____ I want to be an important executive, head of an organization.
_____ I want to live my own life and make my own rules.
_____ I don't want to be in high society, my gang is good enough for me.
_____ I want to have lots of money and be in the country club set.
_____ I want to be a respected, hard-working citizen.
_____ I want to work with tools and equipment and not with writing and books.
_____ I want to be an intellectual -- cultured and individualistic, to follow my own interests, even at the expense of friends, fame, and fortune.

34. What do your parents expect you to accomplish in life?

_____ Be very successful _____ Don't expect much at all
_____ Be moderately successful _____ Don't know

35. What do your parents expect of you at school?

_____ To get very good grades (A's and B's)
_____ To get fairly good grades (C's and Some B's)
_____ Not care how I do

36. What kind of class grouping do you prefer?

_____ One with all kinds of students together -- bright, average, and slow
_____ One with mainly one kind (my kind) of student -- bright together, average together, slow together .

37. What kind of class work do you prefer?

_____ Work that is all at grade level (from one textbook) for all students no matter whether it's easy for some and hard for others

or

_____ Work that is planned especially at a given level. (Select the level you would prefer.)

_____ Advanced
_____ At grade level
_____ Simpler and easier to read

38. In comparison of your ability with the ability of others in a class, are you most comfortable if you are:

_____ One of the best (succeed easily)
_____ Average (about in the middle)
_____ On the low end (always trying to keep up)

39. If you could be remembered here at school for one of the five things below, which would you want to be? (Check one.)

_____Student with the highest grades
_____Star athlete
_____The drag artist
_____Most popular
_____Brilliant, but not a grind

40. If you could have one wish for what you desire most, what would it be?

____

41. Time spent on studying school work. (Fill in both.)

Daily average _____ hours   Weekly average _____ hours

42. Time spent on "general reading," not school studies. (Fill in both.)

Daily average _____ hours   Weekly average _____ hours

43. My reading comprehension is:

_____Good
_____Average
_____Below average

44. My reading speed is:

_____Fast
_____Average
_____Slow

45. When it comes to books I am:

_____An avid reader - read lots
_____Average
_____Not interested

46. Why do you read? (Check those that apply, double check one)

_____It's enjoyable to learn new things
_____It helps me get better grades
_____It will make me a well-rounded and interesting person
_____It will help me get a better job
_____It gives me insight into the meaning of life and the universe
_____I don't read if I can help it

47. What are your reading interests? Read each sentence and decide if it describes you. Check "Just like me," "Mostly like me," "Somewhat like me," or "Not like me" with an "X" in the column that tells how the sentence applies to you.

	Just like me	Mostly like me	Somewhat like me	Not like me
1. I don't read at all I'm a doer.				
2. I read comic books mainly.				
3. I'm a TV fan.				
4. I'm the romantic type. I read movie magazines, true confessions.				
5. I read science fiction from the Fifth Dimension on out.				
6. I read Russian Translations and French non-translations.				
7. I read Ezra Pound and understand him, I think. Off-beat and "free" verse intrigues me.				
8. I read anything from the sports page to Sports Illustrated and back again.				
9. I'm a "how-to-do-it" fan who likes to know how others do it too. I read mechanics magazines and technical manuals.				
10. I read fashion magazines, Mademoiselle, Seventeen, and the like.				

	Just like me	Mostly like me	Somewhat like me	Not like me
11. I read the classics and plays and magazines like the New Yorker whenever I can.				
12. I enjoy social satire and off-beat cartoons. My favorites: Peanuts, Pogo, Charles Adams, and Mad.				
13. I have typical teen-age interests and like the Nancy Drew and Sue Barton series.				
14. I read for information. I enjoy browsing in the encyclopedia.				
15. Biographies are my favorite.				
16. I'm a "Whodunit" fan. Mysteries are my meat.				
17. Western novels are my main diet.				
18. I'll read anything--even the telephone book though I don't like the plot.				
19. I like romantic and historical novels.				
20. I read the Reader's Digest and sometimes Life, Look or the Saturday Evening Post.				

	Just like me	Mostly like me	Somewhat like me	Not like me
21. I keep up on the news via Time, Newsweek, and the newspaper.				
22. Straight science is my choice.				
23. I like serious reading; for example, religious novels.				
24. I don't do much outside reading because I have so much school work to do.				
25. My favorite reading is:				

48. I'd want my ideal school to have: (Choose four only. List in order of choice -- 1, 2, 3, 4.)

___ A winning team
___ A well-equipped science lab
___ A planned course of study with honor roll for good students
___ A parking lot for the kids
___ The best school library in town
___ Shops with the latest and best in tools and equipment
___ Plenty of dances
___ A reputation for high standards in school work
___ Groups which discuss philosophical and ethical problems
___ Technical courses where we learn by doing, not by reading
___ Teachers who know their subjects well
___ Free scheduling to allow for individual interests
___ Order and organization in class
___ Not filled with creeps who butter up the teachers, study all the time, or think they know it all

50. Who in your class is:

The most intellectual -- the creative thinker? ____________________

The one who studies most and gets the best grades? ____________________

The one most likely to be elected to a popular office? ____________________

The best athlete? ____________________

The reble -- the drag artist? ____________________

51. Who are your three best friends?

____

____

____

52. Types of students I prefer. (Check as many as apply. Double-check one for **best** **liked** and **least** **liked**.)

	I like best	I like least
1. The athlete, one of the stars	____	____
2. The brilliant one, brainy but not a grind	____	____
3. The one who does well in school -- good grades, etc.	____	____
4. The popular student, one of the school leaders	____	____
5. The mechanic, handy with tools but allergic to books	____	____
6. The one who goes along with the rules and is dependable	____	____
7. The hotrodder and rebel	____	____
8. The philosopher who discusses ideas	____	____

On the following page are five questions about counselors -- that is, people assigned by the school as advisors. As with the other parts of this survey your answers are confidential.

53. **Good Counselors** (Check those you feel apply.) — **Most counselors I have had** (Answer: Yes or no)

____Have a great capacity to care for others. . . . . ____

____Are sticklers for following rules and regulations . . . . . . ____

____Are highly ethical people, ones I can trust with confidence . ____

____Feel they are authorities in their fields -- are firm, know how to give advice . . . . ____

____Treat me as an individual who has rights and an ability to decide the course of my own life . . . . ____

____Are well-read, intellectually competent, up on current issues in our society . . . . ____

____Are irritated by my breadth of ideas and intensity of interests. . . . . ____

____Help me clarify my feelings . . . . ____

____Make me feel they have time to talk with me . . . . ____

____Feel that my desire to do something important and make a contribution to the world is inappropriate. . . . . ____

____Keep counselling mainly on educational problems . . . . ____

____Are especially interested and helpful in vocational areas . . ____

____Are ones with whom I can discuss personal-social problems . . ____

54. In school I see my counselor

____Once a week
____Once a month
____Once a term
____Other ____________________(Fill in if checked.)

55. We usually talk about (Check what applies, double check the one most frequent.)

____My school schedule
____Future career
____College plans
____Personal problems
____My interests
____Other____________

Complete the following sentences.

56. My school counselor would be more helpful if

57. My school counselor is most helpful in

58. Read each descrition and decide if you have known teachers like these.

Teacher I would like (Check one below.)	Teachers I have had (Check the one column that applies.)			
	Most	Some	Few	None
____ Teacher A is the friendly type. He likes to joke with the kids and he doesn't pile on the homework like some teachers do. Most of the time we just have a good time in class. He's really interested in what goes on around school -- cheers for the team at games and things like that.				
____ Teacher B puts the emphasis on learning the facts, and really knows them himself. There is a feeling of organization in his class. He assigns work in the books and if you keep up you are well prepared for exams. He tries to help students who want to improve, and he appreciates students who meet his high standards.				
____ Teacher C doesn't do much teaching in the usual way although he has insight into many subjects. He wants students to have their own ideas and to learn to discuss problems. He inspires you to work and think on your own and encourages original projects. He's hard because you work hard, but with him it's really learning				
____ Teacher D is the regular type, interested in mechanics, knows how to fix anything. He realizes that there is more to life than books. He doesn't always toe the mark, sometimes his reports aren't in on time, but he can hold his own with the principal and the old fogies.				
____ Teacher E is nice enough, be he just doesn't have much to offer. He usually doesn't really know too much about anything, although he'd never admit it. He has us read the book in class, answer the questions at the end of the chapter, or fill in workbooks--lots of busy work, which seems to take forever, even though it isn't that hard.				
____ Teacher F is one you really dread having. Nothing can please him or goes the way he thinks it should. You could never satisfy him if you tried. He sometimes picks on certain kids more than others, although he doesn't like any of them. You even wonder if he likes himself.				

59. In my experience (List one subject for each of the teachers above.)

A usually teaches____________________ D usually teaches________________

B usually teaches____________________ E usually teaches________________

C usually teaches____________________ F usually teaches________________

60. School Climate:

School I would like (Check one.)

_____ At High School A teachers are quite strict, though friendly. Standards are high and students work for good grades. The classes are well-organized and the assignments are clearcut. There's a definite plan of courses worked out so you know what you'll be studying. Test grades, etc. let you know how you're doing compared to the rest of the class, and good work is rewarded.

_____ At High School B everybody has a good time. Sports are the thing. Everyone dresses "neat," belongs to clubs, and goes to games and dances. Teachers are real pals and know how to joke and kid around. Classes aren't all play, but there's not a lot of home work. Both teachers and principals agree that there should be time for outside activities. They realize how important adjustment and well-rounded development are.

_____ At High School C the key note is learning almost anything! It's work, but there's a chance to choose your own projects and to go ahead as far as you can. There're lots of abstract discussions in class and a kind of freedom in what you do, but the kids don't goof off because they're caught up in what they're doing. Debate, science clubs, literary groups, or philosophical gabfests take up what time is left after school work.

_____ At High School D books are out and mechanics are in. Instead of a library, there's a huge garage with the latest equipment for doing anything to a motor--tearing it down or souping it up. Instead of study halls, there are well-equipped shops for metal work and woodworking. And instead of hall-monitors and supervisors there are mechanical-minded instructors who can help you -- if you want them to, and don't jump on you for missing a day or two or being late now and then.

The school I would most like to attend is _____. (A, B, C, or D)
The junior high school I attended was most like _____. (A, B, C, or D)
The senior high school I attended is most like _____. (A, B, C, or D)

The A-E Test

15.

On this page write a personal history of a completely fictitious person whom you would like to be. You are to make up the name, age, sex, race, and all personal history items of the character and to tell some of the most important experiences he or she has had. Do not plan to spend more than 15 minutes on this. Use the reverse side of the paper to complete your story if you need to do so. Remember this is not a story of your real self.

III Survey of Interests

Please read the following four descriptions of people. Think for yourself in relation to each and pick the one which you think is most like you by placing (√) at the beginning of the paragraph. Don't react to just one or two sentences but try to keep in mind the whole person being described. Pick the one which resembles you most, all things considered. (No one is exactly like these descriptions but any given person is more like one than another.)

Please be frank. Try to take a good look at yourself. Think of the way you really are and not the way you would like to be. Make your decisions carefully.

I

_____I am what people generally call a good student. In fact many say I am the studious type. I try to get my work in on time and feel guilty if I don't. Deep down I feel that people who put things off are lazy and disorganized. Most people think I am hard-working and well-organized but I never quite measure up to my own standards, although I do study hard. I think good grades are important, I always try to do my best, and it matters to me what my teachers think because I admire many of them. If they mark me down or criticize me I get upset. In the summer or after school I often work since this helps prepare me for the future. Besides I can use the money. This plus all of my school work means that I don't have much time to be frivolous and that I can't read for fun as much as I'd like.

II

_____You might say that I lean toward the intellectual type. My interests include almost all areas of knowledge and the frontier of avant-garde material in those areas I enjoy art and drama, I like to listen to good music and most of all I like to read and think. Books are my private passion. They've kept me up oftener and later than my dates have. However, studying texts and school assignments often leaves me cold. To put it bluntly I hate to memorize a list of facts or follow dull and unimaginative directions cookbook style unless this all gets me to a point where I want to be. I hate to say this, but some school work seems pointless. Working, now or later, just for money doesn't have much appeal. Of course I don't really plan to starve in a garret but wearing the same clothes and eating simply would be worthwhile if I could, in this way, free myself to be truly creative or to discover something of value.

III

_____Some people, at least some of the school kids and the teachers, think I'm an odd ball, but my friends like me. The fact of the matter is I don't go for school in a big way. Rather than read, I prefer to do something or make something. I might like school if they paid me, but I'm not even sure I could take it then. There must be a better way to live. The important thing is living and school is a pretty dead place. It's not at all like an evening out on the town. I like speed and action. This book and school stuff is for the birds. And there are lots of birds in school.

IV

_____To me the most important thing is to have a good personality and be friendly. Along with this I want to look sharp (have nice clothes and be well groomed) and, of course, I'd like to have natural good looks too. Doing things of a social nature--going to parties and dances--are the most important activities for me. I like people and I want them to like me. Doing well in school work is O.K. but it is not nearly as important for the future as a good personality, good looks, and general ability to get along. These are the main things to get from school. I don't think a person needs to be ashamed of wanting to be successful. I like to help run things now and I want to be a leader in social affairs when I'm an adult. Similarly, I see nothing wrong in material success. In fact, I am looking forward to having a good income having lots of friends, and a nice home. I think it's fine to do things for other people, although I wouldn't want to sacrifice myself. Sometimes people who are concerned about the unfortunates in the world are radical and over-idealistic.

OPI ITEM ANALYSIS *

In order to further distinguish between the profile types and to better understand how the scales of the OPI differentiated the types, all of the 340 items on the OPI were analyzed separately. After testing the distributions by the chi square, items which achieved significance at the .05 level for the total group* were selected for reporting. Because of the large number (118) of significant items, it was decided to group the items according to similar subject matter or attitudes. In doing so, however, there inevitably were items which did not seem to belong in any category, and so, for the sake of simplicity, were left out, leaving 104 items in nine clusters. Certain items have been included in more than one category. Complete lists of the questions in each cluster, as well as percentages of responses for the profiles and more specific probability levels, are reported:

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*A few items were significant for boys or girls separately, but not for the total group; because of the concern in this research for the superior population as a whole rather than sex differences, these items were not reported. The result on only six scales are reported in the body of the report. Since these scales do not include all 340 items, certain items not used in the scales are reported.

Table A

Aesthetic Appreciation

	Boys			Girls			Total		
Yes:	St	CI	SL	St	CI	SL	St	CI	SL
22.* I enjoy listening to poetry.	24	45 a	32	65	75	48	47	60 a	39
53. When I go to a strange city I visit museums.	24	40	32	29	50 a	37	27	45 a	34
60. I enjoy spending leisure time writing poetry, plays, stories, essays.	7	26 a	13	29	32	11	19	29 a	12
67. I leave the radio tuned to a symphony concert rather than to a program of popular music.	16	29	16	22	39 a	9	19	34 b	12
69. I like to listen to primitive music.	37	57	30	38	68 b	37	37	63 c	33
127. As a youngster, I developed a strong interest in intellectual and aesthetic matters.	43	52	30	45	61	40	44	57 a	34
132. I tend to make friends who are rather sensitive and artistic.	12	26	8	29	41	23	21	34 a	15
139. I enjoy hearing a great singer in opera.	16	31	61	42	66 a	34	31	49 b	24
146. I have spent a lot of time listening to serious music.	13	43	16	43	57 a	26	30	50 c	20
310. I like to read about artistic or literary achievement.	23	36 a	11	50	73 c	31	39	55 c	20
No:									
13. I give more attention to the action of the story than to the characterizations or to the form and style of the literature I read.	20	48 b	16	41	61 a	29	32	55 c	22

Table A Continued

90. I dislike being assigned to write short stories, plays, essays, or songs.	43	60	34	54	64	37	49	61	35
					a			b	
102. I prefer popular music to classical music.	19	31	13	31	59	11	26	45	12
					c			c	

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*Numbers (22, 53, etc.) which appear before the items refer to the order in which questions appear in the test.

On all of the questions in Table A, the creative intellectuals showed the most interest in the aesthetic realm, and the social leaders (except for one item) the least interest. Especially prominent for the creative intellectuals was an interest in classical music. All of the items listed as relating to aesthetic appreciation were a part of the Aestheticism or Thinking Introversion Scales.

Table B

Thinking: Autonomy, Originality, Abstractness

		Boys			Girls			Total		
Yes:		St	CI	SL	St	CI	SL	St	CI	SL
11.	I enjoy reading essays on serious or philosophical subjects.	34	38	32	41	68 b	31	38	53 a	32
34.	I like to read serious, philosophical poetry.	7	24 a	18	32	70 c	40	21	48 c	29
46.	I enjoy solving problems of the kind found in geometry, logic, philosophy.	76	88 a	60	59	79 b	37	66	84 c	49
137.	I prefer a long, rather involved problem to several shorter ones.	40	53 a	21	27	57 c	20	33	55 c	21
155.	I would like to enter a profession which requires much original thinking.	68	81	66	59	89 c	51	63	85 c	58
159.	I have found myself frequently, when alone, pondering such abstract problems as free will, evil, etc.	45	62 a	66	60	86 b	51	54	74 b	59
162.	I like to discuss philosophical problems.	45	53	42	59	86 b	57	53	70 a	49
200.	I like to solve puzzles.	86	88 b	66	82	82	74	84	85 b	70
226.	I would enjoy writing a paper explaining a theory and presenting arguments for and against it.	42	50	34	51	66 b	29	47	58 b	32
242.	I like assignments which requires me to draw my own conclusions from some data or body of facts.	74	79	79	69	86 b	48	71	82 a	64
266.	I would enjoy writing a paper on the possible long term effects or outcomes of a significant research discovery.	34	50	32	38	41 a	17	36	45 a	25

Table B Continued

336.	I enjoy writing a critical discussion of a book or article.	27	43	39	47	59 a	26	39	51 a	33
No:										
29.	I dislike assignments requiring original research work.	72	76	63	74	91 a	63	73	84 a	63
81.	I prefer work which requires little study or thought after it is once learned.	60	76 a	42	66	70	51	63	73 b	47
113.	It is essential for learning or effective work that our teachers and leaders outline in detail what is to be done and how to do it.	48	60	39	73	79 a	51	62	70 a	45
120.	Teachers often expect too much work from students.	46	69 b	34	56	64	37	51	66 c	36
165.	I dislike test questions in which the information being tested is in a form different from that in which it was learned.	46	60	37	50	61 a	29	48	60 b	33
172.	I am unable to explain the reasons for my opinions and reactions.	77	76	60	77	82 a	57	77	79 b	59
238.	I prefer to have a principle or theory explained rather than attempting to understand it alone.	50	64	53	50	75 a	51	50	70 a	52
258.	The thinking which I do is largely limited to that which I must do in the course of my work.	78	88 a	60	84	91	83	82	89 a	71
260.	I must admit that I have no great desire to learn new things.	98	100 c	79	95	95	86	96	98 c	82
323.	It is hard for me to work intently on a scholarly problem for more than an hour or two at a stretch.	22	33	18	32	39 a	9	27	36 a	14

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*These refer to the sequence as the items occur in the OPI.

The creative intellectuals were highest on all the items on Table B, Thinking: Autonomy, Originality, Abstractness, with the social leaders again being the lowest on most of the items. All of the questions in the group, which was the largest and appeared to be the most important of the clusters, appeared on the Thinking Introversion or the Originality Scales. Many were also on the Theoretical Scale, which was not used in this study.

Table C

Preference for the Practical and the Concrete

		Boys			Girls			Total		
Yes:		St	CI	SL	St	CI	SL	St	CI	SL
24.	I am more realistic than idealistic; more occupied with things as they are than with things as they should be.	65	60	58	62	41 a	63	63	45 c	60
104.	Facts appeal to me more than ideas.	36	21	26	20	5 c	40	27	13 a	33
109.	I prefer short, factual questions in an examination better than the ones which require the organization of a large body of material.	81	64	82	64	54	80	71	59 a	81
158.	I am more interested in the application of ideas than in critical consideration of them.	57	43	71	47	34	46	51	38 a	59
214.	I like work requiring considerable physical activity.	77	50 c	87	58	54	66	66	52 b	77
248.	I prefer the practical man any time to the man of ideas.	44	14 b	30	32	16 b	54	37	15 c	41
335.	There is too much emphasis in school on theoretical topics, not enough on practical matters.	40	24 a	58	27	20 a	51	33	22 c	55
No:										
41.	I like to fool around with new ideas even if they turn out later to have been a total waste of time.	17	7	11	25	9	29	21	8 a	19
296.	I read a great deal even when it is not required in my work.	52	38	55	35	14 a	40	42	26 a	48

The social leaders chose the more practical, tangible response more than the other groups on almost all of these questions, and the creative intellectuals showed the strongest preference for ideas and abstraction. The answers given by the studious more closely approximated those given by the social leaders than the responses made by the creative intellectuals. The Thinking Introversion, Originality and Complexity Scales accounted for most of the items in this cluster, but several were on the Theoretical Scale.

Table D

Intolerance of Ambiguity

		Boys			Girls			Total		
		St	CI	SL	St	CI	SL	St	CI	SL
Yes:										
47.	For most questions there is just one right answer, once a person is able to get all the facts.	54	43	66	41	32	49	47	37 a	58
62.	I usually prefer known ways of doing things rather than trying out new ways.	42	21	32	46	25 b	66	44	23 b	48
101.	I much prefer friends who are pleasant to have around rather than those who are always involved in some difficult problem.	87	74 a	97	89	75	83	88	74 a	90
138.	I don't like things to be uncertain and unpredictable.	59	45	58	73	48 a	60	67	46 b	59
190.	I don't like to work on a problem unless there is a possibility of finding a clear cut and unambiguous answer.	49	38	53	48	25 a	46	48	31 a	49
199.	I like to have a place for everything and everything in its place.	75	55	66	68	45 a	72	71	50 b	69
225.	I don't like to undertake any project unless I have a pretty good idea how it will turn out.	48	43	50	51	25 a	54	50	34 a	52
276.	To accomplish something it is essential to concentrate on one thing, even to the extent of being narrow.	35	24	50	18	18	26	25	21 a	38
No:										
20.	I find that a well-ordered mode of life with regular hours is not congenial to my temperament.	55	38	39	63	39 b	37	60	38 c	38
52.	I dislike following a set schedule.	31	26	39	43	16 b	31	38	21 a	36

Table D Continued

171. It doesn't bother me when things are uncertain and unpredictable.	57 50 60	77 45 63 c	69 48 62 b

In responding to the items in this cluster, the creative intellectuals showed the greatest tolerance of ambiguity and acceptance of uncertainty. Both the studious and social leaders were relatively less tolerant and answered most of the questions in a similar fashion. However, the studious were more apt to be high in areas concerned with regular hours and a predictable mode of life, whereas the social leaders were more unaccepting of breadth of interest and unusual ideas. These items have also been included by Rokeach on his Rigidity Scale; the results of this scale had shown the creative intellectuals to be less rigid and inflexible than the other groups, which seems consistent with the findings of this item analysis.

Table E

Independence and Rebellion

		Boys			Girls			Total		
Yes:		St	CI	SL	St	CI	SL	St	CI	SL
32.	I disagree with statements and ideas expressed by my classmates.	46	64	47	51	75 a	57	49	70 b	52
38.	It means a great deal to me to be different.	32	38	34	30	54 a	46	31	46 a	40
40.	At times I have very much wanted to leave home.	33	55 a	58	38	61 a	54	36	58 c	56
80.	When someone talks against certain groups or nationalities, I always speak up against such talk, even though it makes me unpopular.	45	57	34	53	68	49	50	63 a	41
87.	I have always hated regulations.	17	26 b	45	10	30 b	11	13	28 b	29
181.	Unquestioning obedience is not a virtue.	73	74	55	74	81	63	73	78 a	59
No:										
15.	It is best to avoid friendships with persons whose ideas make them unpopular.	64	71	47	71	75 c	31	68	73 c	40
12.	Nothing in life is worth the sacrifice of losing contact with your family.	42	47	42	23	50 b	20	31	49 a	31
85.	It is pretty callous person who does not feel love and gratitude toward their parents.	7	14	5	11	30 a	11	9	22 b	8
204.	A person should adapt his ideas and his behavior to the group he happens to be with at the time.	50	52 a	24	63	68	60	57	60 a	41
247.	In the final analysis, parents generally turn out to be right about things.	9	9	13	7	27 b	11	8	19 a	12

Table E Continued

302. Young people sometimes get rebellious ideas, but as they grow up they ought to get over them and settle down.	25	33	16	20	48	17	22	59	16
					b			b	

On all items indicating independence and rebellion the creative intellectuals showed the strongest tendencies in these directions. Although both the studious and social leaders exhibited dependency and conformity, these appeared in different forms for the two groups. The studious were more dependent on their parents and more accepting of regulations, while the social leaders were more conforming and dependent on the teen-age society. The questions in the group came from a variety of scales, including Social Maturity, Originality, Impulse Expression, and several others which were not used in the project.

Table F

Liberalism and Tolerance

		Boys			Girls			Total		
Yes:		St	CI	SL	St	CI	SL	St	CI	SL
295.	Each person should interpret the Bible for himself.	77	98 a	87	83	89	83	81	93 a	84
298.	There is nothing wrong with the idea of intermarriage between races.	31	40	32	25	39 a	11	27	39 a	22
No:										
66.	Our way of doing things in this nation would be best for the world.	33	52 a	24	47	52 a	20	41	52 c	22
189.	Debate on the national level and free speech at home are wasteful and inefficient approaches that often interfere with good government and should therefore be outlawed.	95	100	89	98	98 a	89	97	99 a	89
210.	In a democracy we should not be critical of our government. Our leaders were chosen because they know what is going on.	72	74	61	81	82 a	60	77	78 a	60
285.	I find it difficult to give up ideas and opinions which I hold.	19	31	24	29	45	26	24	38 a	25
311.	We should respect the work of our forefathers and not think that we know better than they did.	41	50 a	24	29	45	23	34	48 a	23
314.	If you start trying to change things very much you usually make them worse.	53	67 a	32	59	73	54	56	70 b	42
320.	Only a fool would try to change our American way of life.	61	69	50	68	70	51	65	70 a	51
325.	If something grows up over a long time, there will be much wisdom in it.	34	64 b	32	47	52 a	26	52	58 b	29

Table F Continued

334.	When it comes to differences of opinion in religions, we should be careful not to compromise with those who believe differently than we do.	45 76 55	65 68 51	57 82 53
		b		a
337.	Nothing about Communism is any good.	61 74 58	65 82 57	63 78 58
			a	a

On all the items in this cluster, the creative intellectuals made choices which indicated considerable liberality and tolerance and the social leaders appeared the least liberal. The Social Maturity Scale accounted for most of the statements and the others were on scales which were not used in the study. These findings support the results observed on the Rokeach Dogmatism Scale.

Table G

Hedonism, Pessimism and Cynicism

		Boys			Girls			Total		
	Yes:	St	CI	SL	St	CI	SL	St	CI	SL
56.	One must resignedly accept a bleak world and an uncertain future.	23	17 a	39	11	5 b	29	16	10 c	34
68.	Human nature being what it is, there will always be war and conflict.	75	64	82	68	59 a	92	71	61 b	88
112.	In this uncertain world we must provide for ourselves and our families since most of us are powerless to help the world at large.	67	45 c	71	62	48 a	74	64	46 b	73
126.	'Eat, drink, and be merry, for tomorrow you may die' makes good sense.	24	24 a	50	12	14	29	17	19 c	40
133.	Pleasure or happiness for oneself should be the goal of each individual, since life is short and youth is gone before we know it.	63	45 a	71	38	32 c	74	49	38 c	73
319.	I don't blame anyone for trying to grab all he can get in this world.	31	31	53	18	7 a	31	24	19 b	42
340.	A person who lets himself get tricked has no one but himself to blame.	68	55	76	55	43	60	60	49 a	69

The social leaders were the most pessimistic, cynical and hedonistic of the three groups on all of these questions, and the creative intellectuals were the most optimistic, idealistic and socially concerned. The items were mainly from scales which we did not use.

Table H

Duty, Morality and Religion

		Boys			Girls			Total		
		St	CI	SL	St	CI	SL	St	CI	SL
Yes:										
17.	When moving pictures glorify criminals, they undermine the morals of children.	70	50 a	45	77	75	77	74	63 a	60
221.	More than anything else, it is good hard work that makes life worthwhile.	71	57	60	71	50 a	74	71	53 a	67
229.	The most important qualities of a husband are determination and ambition.	68	55	71	53	32 a	63	60	43 b	67
234.	I dislike women who disregard the usual social or moral conventions.	72	60	58	78	66	71	76	63 a	64
251.	I would disapprove of anyone s drinking to the point of intoxication at a party.	76	69	55	93	91 c	74	86	80 c	64
No:										
157.	I have felt so much dissatisfaction with my religious beliefs that I have considered renouncing them completely.	87	86	82	95	79 b	74	91	82 b	78
231.	In religious matters, I believe I would have to be called a skeptic or agnostic.	77	62	60	87	79 a	72	82	71 b	66
235.	I would rather be a brilliant but unstable worker than a steady and dependable one.	85	64 a	82	92	66 c	83	89	65 c	82
324.	I frequently have serious doubts about my religious beliefs.	71	62 a	53	68	61	49	69	61 a	51

This cluster was the only one which clearly distinguished the studious from the other profiles. Although in general all three groups supported these traditional mores of our society, the studious were highest on all the items. The creative intellectuals were lowest on the questions concerned with duty and hard work for its own sake, and the social leaders the least concerned with established religious beliefs. The religious items came from the Agnosticism-Atheism Scale, which was not considered in this research, and most of the other items came from the Social Maturity Scale.

Table I

Concern with Social Activities and Other People

	Boys			Girls			Total		
Yes:	St	CI	SL	St	CI	SL	St	CI	SL
23. I have one or more dates a week.	30	26 b	58	50	43 a	74	41	35 c	66
83. My conversations with friends usually deal with such subjects as mutual acquaintances and social activities.	64	69	84	77	64 b	94	72	66 b	89
93. I am active on the committees of school organizations.	39	17 a	21	55	43	64	48	30 a	41
100. My free time is usually filled with social demands.	35	33	50	47	43 b	80	42	38 b	64
121. I enjoy being in a crowd just to be with people.	63	55 a	82	73	59	83	69	57 b	82
191. I am interested in conversations about people whether or not I am acquainted with them.	58	45 a	79	68	68	77	63	57 a	78
198. I do not avoid large gatherings of people.	77	79	89	83	77	94	80	78 a	92
No:									
45. I like to go alone to visit new and strange places.	58	55	63	68	25 c	51	64	39 c	58

The social leaders were, on almost all of these questions, the most concerned with social activities. On the other two questions, concerned with school committee work and dislike of being alone, the studious were slightly more concerned than the social leaders, but on all the items the creative intellectuals were the least interested in an active social life. The items were all part of the Social Introversion Scale.

Summary

A more composite view of the profiles can be seen by characterizing them in terms of the attitudes described in the clusters. Thus, in comparison with the other groups, the creative intellectuals showed the strongest motivation toward learning. They were more interested in aesthetic matters, more autonomous in their thinking, more willing to be original and solve problems. They also were more independent and rebellious, more liberal, more optimistic, more accepting of uncertainty and ambiguity, and preferred solitude more than the studious or social leaders.

This approach reveals that the social leaders were the most different from the creative intellectuals; they were the least concerned with the aesthetic world, the least interested in being original and solving problems or thinking on their own, and most apt to prefer the concrete and practical to the abstract. They also were more intolerant of ambiguity and of other peoples and philosophies, were less religious, and more pessimistic and cynical than the other groups. They were in many ways conformists much concerned with social activities.

If we suggest a hierarchy where creative and open attitudes are at the upper end and the more dogmatic views at the lower, the studious come, in general, between the creative intellectuals and social leaders. However, the studious had their own pattern. They were more intolerant of uncertainty in their lives, and accepted regulations and were more obedient to their parents. They appeared to have a strong sense of obligation to follow the traditions offered them -- in religion, in morality and in their goals.

Although the clusters provide interesting insights into differences among the types, the questions can be grouped in other ways to provide meaningful contrasts. For example, the creative intellectuals were highest on all questions dealing with love of reading (see the first three clusters) -- they read more, and in widely separated areas. They also showed the strongest interest in writing -- about anything -- of the three profiles (see the first two clusters). In addition, the creative intellectuals showed that they were more independent than the other profiles in other ways than those included in the "Independence and Rebellion" cluster. They wer independent not only of their home and classmates, but also of the need for having their work and their living patterns outlined for them and from the established beliefs around them and from their society itself.